



**International Wildland Fire Summit  
8<sup>th</sup> October 2003**

**Summit Communiqué**

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## International Wildland Fire Summit Communiqué

### Executive Summary

The Summit participants discussed and agreed either in principle or in substance to a series of strategies:

1. An agreement that the **principles** presented in Summit Paper 1 should apply to international wildland fire management projects and exchanges when adapted to local ecological and social conditions.
2. An agreement that an **international agreement template** presented in Summit Paper 2 can be used by agencies wishing to form a cooperative or mutual aid arrangements with one or more other countries for.
3. An agreement that an **Incident Command System (ICS)** presented in Summit Paper 3 should become the international standard for all wildland incident management participating in international or interagency agreements and exchanges.
4. An agreement to a **strategy for future development** as presented in Summit Paper 4.

### Specific Actions by Summit participants:

1. Agreement to a series of regional conferences, summits, or roundtables to be held in the next four years.
2. Agreement to secure resources and funding for hosting the regional sessions and implementing other Summit outputs.
3. Agreement that the Summit outcomes will be transmitted to appropriate international organisations.
4. Agreement to request the assistance from the UN to lead the implementation of the outcomes of this strategy.

### Follow-up Action

1. Establish an interim secretariat to ensure that the Summit outcomes are taken forward.
2. Paper # 1 to 4 to be further developed taking into account the comments of the Summit. Comments to be provided to the interim secretariat by 31<sup>st</sup> October 2003.
3. Develop a Paper # 5 on Community-Based Fire Management by FAO by 31<sup>st</sup> December 2003.

### Other Issues and Business Carried Forward

In addition to the actions noted above, a number of other issues were identified that require further attention, possibly at a future Summit.

These issues carried forward include:

1. The role of gender in fire management;
2. Fire danger rating and fire early warning systems
3. Linking Incident Command System with community-based fire management systems.

## Introduction

The Summit was convened following the 3<sup>rd</sup> International Wildland Fire Conference to proposed and agree on pragmatic and sustainable solutions to the human health, environmental, and economic consequences of unwanted wildland fires. Each person attending the Summit provided valuable experience and insight that contributed to developing synergistic solutions intended to strengthen international cooperation in order to reduce the negative impacts of wildland fires on humanity and the global environment. The Hon Tony Kelly, MLC, NSW Minister for Emergency Services hosted the Summit. The Hon Neville Wran QC, former Premier of NSW, chaired the Summit.

The drive to hold a Summit came from a widely held concern that more needed to be done to improve cooperation at an international level in the prevention and suppression of wildland fires. The overall goal of the Summit is in line with, and supported by, the UN International Strategy for Disaster Reduction (ISDR).

The Summit participants reviewed, and discussed four papers tabled to stimulate ideas, solutions, and strategies to improve communication and coordination between agencies and organizations, and to improve fire management practices for the sustainable use of natural resources and the safeguarding of food security. Adoption of the principles and outcomes provided in the papers will assist organizations attempting to build a coherent response in reducing the negative impacts of wildland fires on humanity and the global environment, while encouraging ecologically and socially beneficial fire use where this is appropriate

## Participants

The Summit was for invited participants with a key interest in the outcome. Invitees were selected for their expertise in wildland fire management and their capacity to influence the implementation of the outcomes of the Summit within their own domestic jurisdiction. In all, 92 people accepted the invitation from 34 countries and 12 international organizations.

## Summit Outputs

The Summit participants discussed and agreed either in principle or in substance to a series of strategies that will build on the work of many groups, conferences and regional summits: (An agreement in principle means that the participants agree that the strategies have merit and will begin to discuss and/or implement the strategies either within their agency or work with local partners to implement the strategy in the region.)

- An agreement that the ***principles*** presented in Summit Paper 1 should apply to international wildland fire management projects and exchanges when adapted to local ecological and social conditions.
- An agreement that an ***international agreement template*** presented in Summit Paper 2 can be used by agencies wishing to form a

cooperative or mutual aid arrangements with one or more other countries for.

- An agreement that an ***Incident Command System (ICS)*** presented in Summit Paper 3 should become the international standard for all wildland incident management participating in international or interagency agreements and exchanges.
- An agreement to a ***strategy for future development*** as presented in Summit Paper 4.

#### **Specific Actions by Summit participants:**

- Agreement with the concept that a series of regional conferences, summits, or roundtables will be held and lead into the 2<sup>nd</sup> Global Wildland Fire Summit no later than 2007, and the 4<sup>th</sup> International Wildland Fire Conference and Exhibition in Spain in 2007.
- Agreement to work individually and collectively to secure resources and funding for hosting the regional sessions and implementing other Summit outputs. The regional summits will be hosted and supported financially by local agencies or organizations. The agenda and themes will be developed locally. The meetings can be held in conjunction with established conferences and meetings.
- Agreement that the Summit outcomes will be transmitted to the following organizations: The United Nations through the International Strategy For Disaster Reduction (ISDR); the Food and Agriculture Organization (FAO); and the International Tropical Timber Organization (ITTO).
- Agreement to request the assistance from the UN to lead the implementation of the outcomes of this strategy, including securing funding in support of the establishment of regional networks, conferences, and summits.

#### **Follow-up Action**

5. Establish an interim secretariat to ensure that the Summit outcomes are taken forward.
6. Paper # 1 to be further developed taking into account the comments of the Summit. Comments to be provided to the interim secretariat by 31<sup>st</sup> October 2003.
7. Develop a Paper # 5 on Community-Based Fire Management by FAO by 31<sup>st</sup> December 2003.

#### **Other Issues and Business Carried Forward**

In addition to the actions noted above, a number of other issues were identified that require further attention, possibly at a future Summit.

These issues carried forward include:

1. The role of gender in fire management;
2. Fire danger rating and fire early warning systems
3. Linking Incident Command System with community-based fire management systems
4. Fire investigation and management of causes of fires.

### **Funding Support**

Funding support for the Summit was provided by:

- The International Tropical Timber Organization (ITTO);
- The Department of Agriculture, Fisheries, and Forestry of Australia (AFFA);
- Telstra, Australia
- The Global Fire Monitoring Center (GFMC);
- The United States Department of Agriculture Forest Service;
- The United States Department of the Interior Bureau of Land Management;
- Emergency Management Australia.

# Annexures

## Guiding Principles for Wildland Fire Management

(Prepared on behalf of the International Liaison Committee for the 2003 International Wildland Fire Summit)

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### **Introduction**

As the world's demand for resources to meet the needs of the global community increases forests, rangelands, farmlands and other ecosystems provide an important share of those resources. How we manage those resources now will affect their availability for future generations. Wildland fire is a critical factor in the health and sustainability of global vegetation.

This paper offers guiding principles for international cooperation in the management of wildland fires on forests and rangelands throughout the world. It is hoped that these principles will act as a catalyst for discussions in many forums with the goal of leading to better methods for providing sustainable resources for the global community today and in the future.

These guiding principles are intended only as a guide. As such they will necessarily only be a starting point. They may need alteration for some developing countries and non-governmental organizations.

### **Preamble**

The world as we know it today has been shaped by the forces of nature over millions of years. Fire is one of nature's powerful forces. It may be creative or destructive, or both at the same time in its environmental impacts. The occurrence, frequency and intensity of fire, both natural or human caused, or its exclusion either through natural or human intervention are determining factors for maintaining, enhancing, or reducing the health and sustainability of ecosystems.

Landowners, land managers and communities must be cognisant of the impacts of their actions and inactions on the environment when using fire. Since fire has such impacts on the potential for sustainable development, communities must take a generational view of the use of fire as a sustainable land management tool. Sustainable development requires communities to consider the collective impacts of their actions now and in the future. Sustainable fire management must certainly be a part of those considerations.

There is a need to integrate management of ecosystems and sustainable development as well as social objectives into fire management planning and practices. In many countries, wildland fires are symptoms of larger socio-political stresses. Agricultural practices in many countries are responsible for ignition of fires, lit for land clearing, weed control or regeneration.

It is critical that communities be engaged with the management of the fires they experience. Community involvement in sustainable land management is critical in all nations, especially where there is dependence on the ecosystem for livelihoods, and should determine how land managers and wildland fire agencies, address the management of fire consistent with environmental care and community standards. Meeting the community's expectations needs a carefully considered approach. Fire management interests need to balance the land management, fire management, social, cultural and environmental objectives. Those managing lands should recognize that fire adapted and fire sensitive ecosystems require policies, tactics and techniques that are ecosystem specific.

Framework considerations for balanced fire management include the Johannesburg Plan of Implementation and the Millennium Development Goals including Goal 1 (Eradicate extreme poverty and hunger), Goal 6 (Combat HIV/AIDS, malaria and other diseases) and Goal 7 (Ensure environmental sustainability)

Key existing multilateral agreements, include: the Convention on Biological Diversity in particular the target set down within the Plan of Implementation: "the achievement by 2010 of a significant reduction in the current rate of loss of biological diversity", Ramsar, the World Heritage Convention, the UN Framework Convention to Combat Desertification, the UN Framework Convention on Climate Change and the Final Statement of the recent XII World Forestry Congress. There is a need to consistently communicate relevant wildland fire issues to the secretariats and participants of multilateral environmental agreements.

The following guiding principles for international collaboration of wildland fire management are presented as a basic framework for landowners, land managers and communities to consider in their approach to complimentary and integrated fire management.

### **International Cooperation in Wildland Fire Management Guiding Principles**

International cooperation projects and initiatives should be based on the following considerations:

- Systematic monitoring, accurate reporting and accessible information archiving are integral components of effective fire management. Open, transparent sharing of data and information on fires, their extent and distribution, causes and impacts is fundamental to effective international cooperation;
- Initiatives should be appropriate to the culture, technology, environmental conditions, educational and economic circumstances of the recipient country, given the need for long-term sustainable outcomes;
- Developing countries are especially challenged by the management of fires because of their important links with land use practices, socioeconomic and social issues and food production. Any management strategies must take account of the principles of poverty alleviation and sustainable development;
- Consideration must be given to the cultural context in-country, where, in many instances, fire is an established part of land management and

agricultural practice, and where alternatives to the use of fire may be either unacceptable to the local community or unfeasible.

- Community-based fire management will usually form the basis of effective fire management programs at the community level, in both developed and developing countries. Some communities may benefit from a better understanding of the role and impact of fire on the environment, including situations involving the deliberate use of fire;
- Projects and programs should be undertaken within the context of a cooperation agreement or similar arrangement that makes clear the contributions, commitments and responsibilities of all those involved, especially in relation to accountability, command and control, and financial, human resource and other non-financial inputs of the project;
- Projects should, in most cases, seek to achieve sustainable institutional strengthening and capacity building within government agencies that are responsible for forest fire management. In appropriate circumstances this enhancement work will include Non-Government Organisations and the private sector;
- Wildland fire management projects and initiatives should have as one objective the delivery of sustainable outcomes for end users at the local community level, including improvement in the capacity of local communities to manage wildfires;
- Wherever practicable, fire suppression projects and initiatives should be undertaken using agreed international procedures and protocols which facilitate effective and safe cooperation and coordination on the fireground; and
- The outcomes and outputs of wildland fire projects and research should be made available to the international community to enhance advances in wildland fire management globally.

### **Wildland Wildfire Management Guiding Principles:**

The following guiding principles for wildland fire management are presented as a basic framework for landowners, land managers and communities to consider in their approach to complimentary and integrated fire management undertaken for international collaboration.

### **General Guiding Principles**

1. Land and resource management objectives, and the society's expectations that they reflect, should be compatible with the dynamics of the fire regime for which they apply and be consistent with community and firefighter safety considerations.
2. The management of wildland fire should be based upon the holistic approach of fire protection planning, prevention, suppression and rehabilitation.
3. All wildland fire management activities should be safe, cost effective and support sound natural resource management.

Consistent with a more inclusive style of fire management that incorporates the needs and expectations of local people, ***fire management and suppression plans must incorporate and understand the needs and expectations of communities and local stakeholders.*** Effective

engagement of communities is essential. Also, fire managers in developed nations are increasingly held accountable for firefighter health and safety by agencies responsible for fire suppression. This will inevitably flow to emerging nations. This applies not only to the firefighters within their agency but also for all personnel engaged in suppression and support activities. At the same time many agencies find that they are not resourced at a level to meet peak fire loads. Hence, in recent times there has been a greater sharing of resources on the land where the wildfire is burning to assist the agency primarily responsible for fire suppression. To effectively manage such co-operative resources, agencies need to conduct fire suppression operations in accordance with a, ***previously agreed command and control structure***. The response must satisfy all legal requirements, be thoroughly planned, safe, effective, cost efficient, and environmentally sensitive.

Fire management should consider:

- Having in place appropriate ***fire protection plans*** to deal with the inevitable occurrences of wildfire. Such plans must include an assessment of the threat to human life, property, forest, other wooded land and other land assets and values<sup>1</sup>; and must consider these in conjunction with the management objectives for the area where fire suppression actions will be implemented;
- Undertaking actions of ***fire prevention*** to minimize, as far as practicable, the incidence and extent of unwanted fires (i.e. wildland fires of human origin both deliberate and accidental);
- Basing preparedness<sup>2</sup> for fire suppression<sup>3</sup> on ***designated performance criteria*** and reflecting the variable nature of fire danger<sup>4</sup>;
  - Developing ***early warning capability*** of wildland fire danger;
- Insuring ***prevention activities*** are in place to reduce the hazards and potential losses from wildland fires;
- Stating ***fire suppression objectives*** clearly and insuring they are communicated;

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**Forest:** Land with tree crown cover of more than 10 percent and area of more than 0.5 hectares. The trees should be able to reach a minimum height of 5 meters at maturity. **Other wooded land:** Land either with a crown cover of 5-10 percent of trees able to reach a height of 5 meters at maturity; or a crown cover of more than 10 percent of trees not able to reach a height of 5 meters at maturity; or with shrub or bush cover of more than 10 percent. **Other land:** Land with less crown cover, tree height, or shrub cover as defined under "Other wooded land". Indication is desired if recurring wildfires affect "Other land" by inhibiting regeneration to the "Forest" and "Other wooded land" categories.

<sup>2</sup> **Preparedness** All activities undertaken in advance of wildfire occurrence to decrease wildfire area and severity and to ensure more effective fire suppression including

(1) The state of being ready to cope with a potential fire situation (syn. Readiness). (2) Mental readiness (awareness) to recognize changes in fire danger and act promptly when action is appropriate (syn. Readiness)

<sup>3</sup> **Fire suppression** (= fire control, response) the activities connected with restricting the spread of wildfire controlling and extinguishing a fire following its detection and making it safe.

<sup>4</sup> **Fire danger**

A general term used to express an assessment of both fixed and variable factors of the fire environment that determine the ease of ignition, rate of spread, difficulty of control, and fire impact; often expressed as an index.

- Insuring a ***measured fire suppression response*** that reflects the threat, the safety of firefighting personnel and the public, and the impact on the environment and costs;
- Formalizing ***a single management structure*** for all personnel;
- Insuring that ***suitably trained, equipped, assessed, and accredited personnel*** are appointed to appropriate positions within the management structure at all levels from the fireground up;
- Insuring ***principles of environmental care*** guide all preparedness and suppression activities;
- Basing ***rehabilitation of disturbance*** resulting from suppression works and rehabilitation activities, which are part of a broader post-fire recovery<sup>5</sup> strategy, on sound principles of environmental care;
- Basing management planning on ***scientific and field research***;
- ***Cooperating and sharing*** with other countries, agencies, jurisdictions and communities that face similar wildland fire management challenges;
- Striving for ***consistent funding*** that enables fire managers to adequately meet the goals of the guiding principles safely and efficiently.

### **Fuels Management Guiding Principles**

Fuels management programs should be planned to provide for the protection of human life and property, by reducing the potential hazards associated with wildland fires while maintaining the environmental integrity of the landscape and preserving cultural resources. Reducing fuels through mechanical or physical means or through the use of prescribed burning<sup>6</sup> to achieve management objectives must satisfy legal requirements, be thoroughly planned, and when conducted, be in accordance with clearly defined procedures providing for safe work practices and manageable fire behaviour; be environmentally sensitive; and have the outcomes monitored and recorded.

In conducting fuels management operations the following should be considered:

- Integrating fire prevention and land management aims to the maximum extent practicable for all fuels management within a given area;
- Balancing fuels treatment plans with the often competing objectives of the role of fire in the maintenance of biological diversity, the responses of different ecosystems to fire; natural patterns of succession, and the risk of wildland fire;
- Using or excluding prescribed fire based on scientific knowledge;

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<sup>5</sup> **Recovery** The post-fire phase where damaged assets are salvaged repaired or replaced; sites disturbed by fire control operations are rehabilitated; the natural response of the ecosystem is monitored, and managed if necessary; health and safety issues arising from the fire control operation are addressed; and lessons learned from the incident are incorporated into planning for future wildfire events.

<sup>6</sup> **Prescribed burning** The controlled application of fire under specified environmental conditions to a predetermined area and at the time, intensity and rate of spread required to attain planned resource management objectives.

- Basing prescribed burning operations on clearly defined objectives and prescriptions, providing a safe working environment, and minimizing the risk of fire escape;
- Incorporating during the fuels management planning process, the principles of environmental care, in accordance with approved standards, prescriptions and guidelines;
- Community engagement of those who benefit from use of fire and who benefit from more control.

### **Environmental Care Guiding Principles**

Fire management activities should be based upon good science and follow sound management principles. These activities should be planned and conducted in an environmentally sensitive manner taking into account:

- Fire regimes<sup>7</sup> and fire management<sup>8</sup> activities appropriate to maintain the vigour and diversity in populations of species and communities of the area's indigenous flora and fauna, particularly the ancient primary forest and wildlife fauna described in the UN Convention on Biodiversity;
- Water quality and quantity being protected by measures which minimize the impact of fire management activities on streams, springs, soaks, swampy ground and bodies of standing water, and their physical, chemical, and biological quality;
- Soil being protected by measures which prevent inappropriate destruction of its physical and chemical properties or which promote stabilization of bare or disturbed earth following disturbance;
- Landscape values, geomorphological features, cultural and historical sites being considered when planning operations;
- Indigenous flora and fauna being protected following wildfire suppression by measures which promote the re-establishment of the ecological processes existing prior to the wildfire;
- Avoid the possible introduction and spread of pest plants and animals, plant diseases, and insect pests; and
- Air quality being addressed by measures which balance the impacts of smoke generated by prescribed burning.

### **Conclusion**

These guiding principles for international collaboration on fire management projects and activities are presented for consideration by countries and communities faced with managing wildland fire. In an increasingly complex global environment, they are presented with the knowledge that other countries and organisations are facing the issues of fire management. This set of principles has been prepared as a step in providing a clearer basis of engagement between those involved in fire management.

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<sup>7</sup> **Fire regime** The season, intensity and frequency of fire in a given area over a period of time.

<sup>8</sup> **Fire management** All activities associated with the management of fire-prone public land values, including the use of fire, to meet land management goals and objectives. It involves the strategic integration of such factors as knowledge of fire regimes, probable fire effects, values threatened, level of forest protection required, cost of fire related activities, and prescribed fire technology into multiple use planning, decision making, and daily activities to accomplish stated resource management objectives.

Many organisations, bodies, governments, agencies and institutions have undertaken analyses, documented expectations, prepared guidelines and created materials. For example the International Tropical Timber Organisations Guidelines for Fire Management in tropical forests, and the Guidelines on Fire Management in Temperate and Boreal Forests prepared by the FAO. The extent to which they have been shared, evaluated and adapted for adoption is limited. These efforts as well as those of others should be studied, compared, contrasted, and discussed. The guiding principles presented here are intended to enhance this process, so that those faced with the challenges of wildland fire will have a full spectrum of ideas and information to help in the development of approaches, processes and systems that best meet their needs.

## **International Wildland Fire Management Agreements Template**

(Prepared by the International Liaison Committee for the 2003 International Wildland Fire Summit)

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### **Introduction**

The 3<sup>rd</sup> International Wildland Fire Conference held in Sydney, Australia 4-6 October 2003 and the subsequent Summit on 8 October 2003 provides important forums for discussions of how to manage the future of international wildland fire management and share solutions to global problems. This paper offers a template and information on cooperation in wildland fire management to countries interested in entering into formal relationships and agreements with other countries facing similar issues.

This paper is intended to enhance current international coordination and cooperation by providing information on the following:

- A Template outlining areas to consider when developing international cooperative agreements;
- Listing of the types of cooperation and assistance that may occur between countries;
- The responsibilities of countries sending assistance and of those receiving assistance;
- Websites containing information and examples of existing cooperative agreements and arrangements.

### **Template for International Cooperative Agreements**

The following is an outline for a template of areas that need to be considered when countries are developing international cooperative agreements. There may be other areas that need definition and consideration besides those listed below. This template is drawn from an annex of a UN Food and Agriculture Organization (FAO) document *Legal Frameworks for Forest Fire Management: International Agreements and National Legislation*. This FAO document provides excellent reference materials, which should be reviewed prior to entering into international agreements.

Developing countries will require special consideration because they may not be able to reciprocate in a partnership as fully as a developed country can.

The important role of Non-Government Organisations (NGOs) should be considered as part of any bilateral or regional assistance arrangement.

It is strongly recommended that the parties to a mutual assistance agreement should exercise the agreement through exchanges, field exercises and low-level assistance prior to it being activated at a time of crisis.

## **Outline for International Cooperative Agreements**

1. Parties to the Agreement
  - Includes governmental and non-governmental agencies and organizations at a variety of levels.
2. Purpose
  - Defines areas and forms of cooperation.
  - Define the scope of the cooperation.
3. Definition of Terms
  - Defines terms used in the agreement to insure there is no confusion or misinterpretation as to the meaning of the content of the agreement.
5. Expenses and Costs
  - Personnel- Defines how personnel costs will be set such as per person, per crew, per day or per assignment.
  - Equipment - Defines how equipment cost use will be set such as per day or per assignment.
  - Reimbursement of costs – Sets the procedures, amount, and criteria for reimbursement. Some agreements call for reimbursement only after a certain threshold of time or level of support has been reached.
  - Non-reimbursable – Under certain agreements all parties may agree to assist each other on a mutual aid, non-reimbursable basis.
6. Information and Coordination
  - Communication channels – Defines the protocols and methods to coordinate and exchange information.
  - Information exchange – Defines the types, amount and timing of information exchange.
  - Notifications – Sets the notification procedures for emergencies or for other significant events.
  - Coordination of work – Defines how and under what organizational structure the coordination of work will take place.
7. Liabilities, Claims and Compensations
  - Cross-wavier of claims/exemption from liability – Lists and defines how and when the cross-waivers and exemptions are in force for personnel that are being exchanged.
  - Exemptions to cross-wavier of claims – Lists and defines those areas or circumstances where the exemptions do not pertain to personnel that are being exchanged.
  - Damage to a third party – Outlines remediation methods and limitations for third party damage.
  - Medical assistance for injured personnel – Defines the protocols and procedures for assisting and possibly evacuating injured personnel.
  - Compensation in case of injury or death – Defines the timing, levels and limitations of compensation for injury or death. This may also be addressed above in the cross waivers and exemptions.

- Privileges and immunities for the assisting personnel – Describes and defines the levels and limitations of privileges and immunities that the receiving country will provide to assisting country personnel.

#### 8. Operating Plans / Operational Guidelines

- Provision for operating plans/operational guidelines – Operating plans/operational guidelines are a critical component of all cooperative agreements. They should be carefully crafted and reviewed by all parties to the agreement. The plans and guidelines outline and define specific operational areas to insure that the agreement can be implemented in a timely and efficient manner. They include items such as points of contact, procedures for requesting resources, entry procedures, annual updates of costs, reimbursements, and cross waivers, and updated standards, qualifications or training requirements. Also identifies how often and by whom the plans and guidelines will be reviewed, updated and the method for revalidating the contents of the plans and guidelines.

#### 9. Border Crossings

- Sets protocols and procedures for simplifying of border crossing taking into account sovereignty issues, including the following:
  - Opening of alternative border-crossing points to facilitate the assistance
  - Customs provisions:
    - Concerning personnel
    - Concerning equipment and materials
    - Concerning officer responsible for equipment
    - Concerning aircraft

Portions of this information will also be included in the operational plans and guidelines.

#### 10. Link to Disaster Management Plan for the receiving country.

- Explains how the fire assistance plan sits within the wider disaster management plan for the receiving country, including legislation giving the necessary powers.

#### 11. General Provisions

- Entry of force of the agreement - Defines when agreement is activated.
- Duration – Specifies how long the agreement will remain in force
- Withdrawal – Defines how countries or organizations can withdraw from the agreement.
- Termination – Defines under what circumstances the agreement will terminate.
- Interpretation – Provides understandings and interpretations for countries and organizations concerning under what circumstances and limitations each party is entering into the agreement.
- Settlement of disputes – Defines the method of dispute resolution.
- Amendments – Defines when and how amendments to the agreement may be submitted, reviewed, and acted upon.

## 11. Standard Operation Procedures

- These procedures describe in detail the methodology to be followed when the agreement is activated, especially in relation to command and control, fire suppression procedures to be followed, communications systems and safety procedures to be used.
- The SOPs should be tested and refined using tabletop exercises, dry field exercises and low scale operations before being deployed in a full scale emergency.

## 12. Other Provisions

- Provides the opportunity for any country, agency or organization signing this agreement to define other areas of cooperation that they want to include in the agreement such as:
  - Shared training activities, including materials
  - Study tours, technical exchanges, and joint exercises
  - Relationship of this agreement to other agreements
  - Standards for personnel
  - Safety equipment
  - Limitations on the type and use of telecommunications equipment
  - Method of recall of firefighting resources

## 12. Participating Countries/Agencies/Organizations Signature Page

- It is important that all potential participants review and confirm their authorities to sign such an agreement.

### **Types of Cooperation and Assistance**

International cooperation and assistance occurs in a variety of ways. Some agreements are non-reimbursable while others call for reimbursement. Some assistance is offered on a technical non-reimbursable basis and other assistance is offered or solicited during periods of disaster. When countries develop international cooperative agreements the purpose and method of cooperation and assistance need to be clearly identified and understood between all parties. The following describes several types of cooperation and assistance that currently exist.

#### **Mutual Assistance:**

Mutual Assistance agreements often deal with fire management issues along shared borders. Assistance by one country to another is usually non-reimbursable with the understanding that both countries may benefit at different times from assistance along mutual borders

#### **Cooperative Assistance:**

These agreements are for assistance and cooperation throughout the countries or states that have signed the agreement, not just for the border areas. These agreements are usually set up on a reimbursable basis.

They may also include non-reimbursable exchanges of experts. These exchanges may include areas such as fire prevention and mitigation, prescribed fire, personnel exchanges, and broad based study tours of fire management programs.

**Technical Exchanges:**

Activities carried out under technical exchanges are similar to cooperative assistance agreements but are much more informal and exchanges are not always tied directly to an ongoing agreement. These are usually self-funded, non-reimbursable activities that occur on an as needed or as desired basis. They remain at technical and informational exchange level and do not include exchanges of resources to help with direct fire suppression activities.

**Technical Assistance:**

An offer of or a request for technical assistance may or may not be a part of a formal agreement. Technical assistance provides experts from one country to another country in need of technical assistance, to improve and strengthen the receiving country's abilities and capacity to deal with wildland fire management issues. The goal of technical assistance should be to reduce the need for outside assistance in the future. This type of assistance is usually non-reimbursable and is paid for by the country offering the assistance.

**Disaster Assistance:**

When wildland fires involve trans-border issues from a humanitarian, ecological, medical, economic, or diplomatic standpoint, some countries will offer immediate disaster assistance to affected countries on a non-reimbursable basis. Disaster assistance is meant to assist the affected country during a critical time period and may or may not be based on existing cooperative agreements. Disaster assistance may be the genesis for future cooperative agreements or technical assistance programs.

**Responsibilities of Sending Country and Receiving Countries**

Countries sending or receiving assistance through the methods and agreements identified above need to understand that certain responsibilities are inherent in these relationships. The following paragraphs identify the responsibilities of all countries, agencies, or organizations involved. There are certainly more issues than those listed below that should be discussed prior to sending or receiving assistance but the information below attempts to identify some of the key elements of the responsibilities involved in these types of arrangements.

**Sending Countries:**

It is important to note that as countries enter into formal cooperation agreements with other countries, the success or failure of those agreements rests just as much on the personal conduct of the sending country's representatives as it does on the effectiveness of their fire management capabilities. It is critical to always send the country's most appropriate and qualified personnel, as the receiving country will quickly detect whether they are receiving the help they need or individuals who were selected on rank or seniority and not on skills and capabilities. This is especially critical with reimbursable agreements. Of particular importance is cultural sensitivity towards the people of the receiving country. Personnel being sent will be seen as ambassadors for their country and qualities appropriate to such a role should be included in the selection criteria.

Teams and individuals must also be made aware of local issues dealing with laws, customs, language, dress, food, etc. They must also be briefed on the command and control arrangements and their role and responsibilities within the fire management system of the receiving country.

Sending countries should prepare lists of resources, funding, materials and manpower that may be made available to receiving countries. It is essential that this information is kept accurate and current.

Both sending and receiving countries should maintain and exchange data on the nature, extent and frequency of fires so that the level of assistance sought and made available can be anticipated in any particular season.

### **Receiving Countries:**

Just as sending countries have certain responsibilities, receiving countries must also accept the responsibilities involved in hosting personnel from other countries. Receiving countries must be prepared to brief sending country teams and representatives on the issues mentioned above as well as fire issues such as fuels, weather, topography, safety, management structure on the fires, fire fighting techniques and equipment, types and lengths of assignments, etc. Of particular importance is briefing on communications and legal issues within fire management as well as political and social sensitivities within the wider community. Receiving countries must also be prepared to provide logistical and operational support including welfare support as required.

### **Websites with Examples of Cooperative Agreements and Arrangements**

National authorities are encouraged to contribute brief case studies, based on their own national experiences, to illustrate the different types of cooperation/assistance agreements that are currently in place or being prepared. Case studies can be forwarded to the Executive Officer, International Wildland Fire Summit, at [Duncan.Sutherland@rfs.nsw.gov.au](mailto:Duncan.Sutherland@rfs.nsw.gov.au) and to the Food and Agriculture Organization of the United Nations (FAO), Forestry Department (FORM) at [Mike.Jurvelius@fao.org](mailto:Mike.Jurvelius@fao.org). The information will be incorporated into the FAO documentation "Legal Frameworks for Forest Fire Management: International Agreements and National Legislation" which will be updated continuously. This document and other supporting reports are provided on the websites of FAO and the GFMC at:

<http://www.fao.org>

[http://www.fire.uni-freiburg.de/emergency/int\\_agree.htm](http://www.fire.uni-freiburg.de/emergency/int_agree.htm)

### **Conclusion**

The fire management issues identified and discussed at the 3<sup>rd</sup> International Wildland Fire Conference highlight the connections and common concerns of the global community about wildland fire. This Summit represents an extension of the work accomplished at the Conference and provides a mechanism to identify ways to continue that progress. This paper has identified issues and provided a template to encourage countries to cooperate in dealing with wildland fire.

## **Incident Command System (ICS)**

(Prepared by the International Liaison Committee for the 2003 International Wildland Fire Summit)

### **AUTHORS:**

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### **Introduction**

As a result of severe fires over a number of years, national leaders have demanded a more coordinated approach to the management of wildfires. There have been many examples over the years of large numbers of fire suppression agencies making gallant attempts to minimize the devastation of uncontrolled wildfires. However, their ability to effectively cooperate with other fire agencies was limited by organisation and communication barriers. In the USA, State and Federal legislators, concerned at the lack of uniform emergency management protocols, directed federal, state, and local government to develop a common incident command system that would make a quantum jump in the capabilities of wildland fire protection agencies to effectively coordinate interagency actions and to allocate suppression resources in dynamic, multiple fire situations. This landmark direction created the beginning of the Incident Command System (ICS), and the ability of emergency response personnel to work together toward common objectives. Australia and New Zealand, faced with similar emergency response issues, evaluated incident management systems around the world, elected to adopt the ICS and modify it to meet their specific needs.

The community expects that emergencies will be dealt with safely, effectively and efficiently by emergency services. Experience has shown that at times parochial attitudes, internal politics, and the lack of communication result in poorly managed emergency operations. Lack of co-ordination between agencies and unclear accountabilities often results in safety issues being overlooked. There is therefore, a professional, social, political and economic demand for the management of emergency incidents to be enhanced wherever possible.

The complexity of incident management, coupled with the growing need for multi-agency and multi-functional involvement at incidents has increased the need for a standard inter-agency incident management system not only within a country/state but increasing internationally. Many countries have adopted similar or common systems of addressing emergencies. In addition a number have developed firefighting agreements based on a common system enabling interoperability when lending support to other countries. In the past this is usually to support adjoining States or Countries within the same geographical region. Since 2000 we have seen examples of this being broadened by support provision occurring from different hemispheres. In 2000 and 2002, Australia and New Zealand sent critically needed incident managers to the USA. Similarly early in 2003 the USA reciprocated sending fire specialists to Australia. Canada and the USA frequently exchange firefighting forces, especially along their borders. New Zealand sent firefighting forces to

Australia in 2002 and 2003. ICS was also used during the wildland fire emergency in Ethiopia in 2000.

The Incident Command System may need to be adapted to suit a particular country's existing political, administrative or cultural systems, customs and values. Where the primary purpose is to enhance emergency management within a country, such adaptations are not only beneficial, but may be essential to have the ICS system adopted. If the purpose of adopting ICS is to enhance cooperation between countries, through the sharing of resources such as fire management teams, it is highly recommended that the sending country and the receiving country both use the same emergency management system. This paper suggests that such a system should be the ICS. Given that ICS is a proven model in many countries and given that training materials for ICS are freely available, there is considerable benefit to be gained by a country adopting this system.

### **Objective**

The purpose of this paper is to recommend the adoption of a common international incident command system by all countries. This action will leverage the domestic capability of emergency response managers by utilizing other trained personnel within the country, will facilitate international training of fire managers, and will enhance the global interoperability of emergency managers. In many countries, emergency responders are periodically faced with overwhelming emergency situations, and additional emergency responders, trained to common operational procedures, are difficult to locate. The global capability to support other countries is often hampered by incompatible operating procedures or organizational incompatibilities.

### **Background**

Incident management systems in one form or another exist in many countries. In most countries, local emergency operating protocols have evolved over the years to meet the specific demands of the jurisdiction. Many have been copied from the military command and control models. Unfortunately, most of these models do not provide consistent procedures or organizations throughout each country. The ICS is the most widely used incident management system. It was specifically designed to address the majority of management problems common to most complex incidents. These problems included:

- Inefficient supervisory span of control.
- Competing organizational structures
- Inconsistent or non-existent incident information
- Incompatible communication systems
- Uncoordinated planning across agency lines
- Unclear lines of authority
- Competing agency incident objectives
- Inconsistent terminology.

It took a considerable investment of time and effort to design an incident management system that could address all of those issues. ICS has a proven record in many countries around the world. ICS has been fully implemented in

Australia, New Zealand, Canada, and the USA. Mexico and Costa Rica have interpreted the ICS training course into Spanish, and have begun to teach ICS to wildland firefighters. In addition, Taiwan, Bulgaria, and Mongolia have received ICS training, and new training programs are starting in India and South East Asia. Recently, the USA has adopted ICS as the national incident management system to manage all domestic emergency threats and responses.

ICS was developed on four basic principles.

1. The system must be organizationally flexible to meet the needs of incidents of any size and kind.
2. Organizations must be able to use the system on a daily basis for routine situations and major emergencies.
3. The system must facilitate a common management structure that integrates personnel from different locations and from a variety of agencies.
4. The system must be cost effective.

### **ICS Framework**

The ICS framework provides an effective forum for interagency emergency management issues to be addressed. By establishing a unified command of the respective agency/jurisdictional representatives together at a single interagency incident command location, the following advantages will be achieved:

- One set of objectives is developed for the entire incident.
- A collective approach is made to developing strategies to achieve incident objectives.
- Information flow and co-ordination is improved between all jurisdictions and agencies involved in the incident.
- All agencies with responsibility for the incident have an understanding of each other's priorities and restrictions.
- No agency's authority or legal requirement will be compromised or neglected.
- Each agency is fully aware of the plan, actions, and constraints of other agencies.
- The combined effects of all agencies are optimised as they perform their respective assignments under a single Incident Action Plan.
- Duplication of effort is reduced or eliminated thus reducing costs and the chance of frustration and/or conflict.

From this unified approach, a single incident action plan is developed. Success in this area requires advance planning, understanding and acceptance within respective agencies. If not fully understood, it can cause confusion or be rejected.

### **ICS Principles**

The ICS structure is based on the following principles:

#### **Common terminology**

Common terminology is essential in any emergency management system, especially when diverse or other than first-response agencies are involved in the response. When agencies have slightly different meanings for terms, confusion and inefficiency can result. In ICS, major organisational functions, facilities, and resources are predesignated and given titles. ICS terminology is standard and consistent among all of the agencies involved.

### **Modular organisation**

A modular organisation develops from the top-down organisational structure at any incident. “Top-down” means that, at the very least, the Control/Command function is established by the first-responding officer who becomes the Incident Controller. As the incident warrants, the Incident Controller delegates other functional areas. In approximately 95 percent of all incidents, the organisational structure for operations consists of command and single resources (e.g., one fire truck, an ambulance, or a tow truck). If needed, however, the ICS structure can be scaled up to multiple layers that are implemented to meet the complexity and extent of the incident.

### **Integrated communications**

Integrated communications requires a common communications plan, standard operating procedures, clear text, common frequencies, and common terminology. Several communication networks may be established, depending on the size and complexity of the incident.

### **Consolidated Incident Action Plans**

Incident Action Plans describe response goals, operational objectives, and support activities. The decision to have a written Incident Action Plan is made by the Incident Controller, dependent on the duration and complexity of the incident. Incident Action Plans should cover all objectives and support activities that are needed during the entire operational period. A written plan is preferable to an oral plan because it clearly articulates responsibilities and provides documentation when requesting assistance. Incident Action Plans that include the measurable objectives to be achieved are always prepared around a timeframe called the operational period.

### **Manageable span of control**

A manageable span of control is defined as the number of individuals or functions one person can manage effectively. In ICS, the span of control for any person falls within a range of three to seven resources, with five being the optimum.

### **Designated incident facilities**

It is important that there are designated incident facilities with clearly defined functions to assist in the effective management of an incident. Every incident requires that control be managed from one identifiable Incident Control location. Additional facilities are designated as the complexity of an incident increases.

### **Comprehensive resource management**

Comprehensive resource management is a means of organising the total resource across all organisations deployed at an incident. This includes:

- maximising personnel safety
- optimising resource use
- consolidating control of single resources
- reducing the communications load
- providing accountability
- reducing freelancing
- assigning all resources to a status condition
- managing day and night shift resources

- enabling sustaining resources during long duration (campaign) incidents.

### ICS Organisational Structure

Many incidents – whether major emergencies or disasters (such as cyclones or earthquakes) or more localised incidents (such as accidents, hazardous substance spills or fire incidents) require a response from a number of different agencies. No single agency or department can handle every large-scale emergency situation alone. More usually, several agencies must work together to manage multi-agency emergency response. To co-ordinate the effective use of all the available resources, agencies need a formalised management structure that lends consistency, fosters efficiency, and provides direction during a response.

The ICS organisation is built around four major components:

1. **CONTROL** – the management of the incident
2. **PLANNING** – the collection and analysis of incident information and planning of response activities
3. **OPERATIONS** – the direction of an agency's resources in combating the incident
4. **LOGISTICS** – the provision of facilities, services and materials required to combat the incident.

These four major high-level structural components (as further illustrated in Figure One) are the foundation upon which the ICS organisation is built. They apply during a routine emergency, when preparing for a major event, or when managing a response to a major disaster.

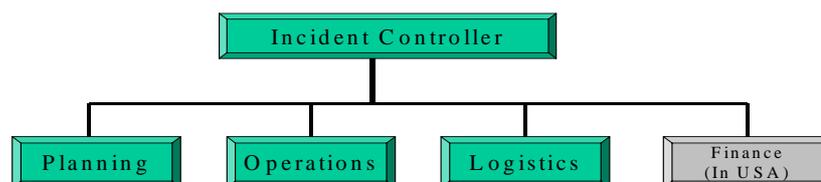


Figure One - Four high level structural components

The ICS structure can be expanded or contracted to manage any type and size of incident. The complexity of the incident more than the geographic size is normally the determinant for the Incident Controller establishing additional members of the Incident Management Team to fulfil management functions. ICS requires only one position to be filled – that of the Incident Controller. The Incident Controller carries out all of the management functions and responsibilities until the complexity of the incident determines that he or she assigns someone else responsible for a particular function(s). This is only

done when necessary. Figure 2 illustrates a complex organisational ICS structure for managing a complex wildland fire incident.

## Incident Management

Incident management can be viewed as a system composed of inter-related components that function together to enable the best possible management of an emergency of any scale. As such, it is necessary to understand the function of individual components, as well as how they fit together.

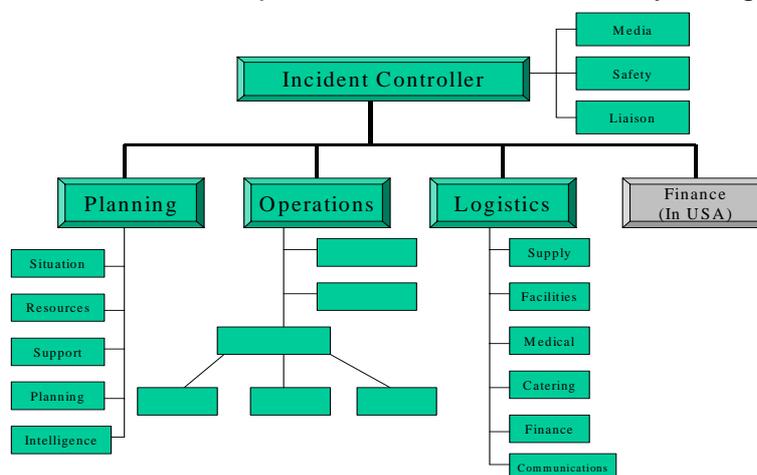


Figure Two - Complex organisational ICS Structure

The Incident Controller is responsible for the overall direction of the response activities in an emergency situation and is the person in charge of an incident. The Incident Controller will carry out all management functions and responsibilities until the incident assumes such a size that it requires additional functional roles to be appointed. It is important to distinguish between Incident Control, which relates to situations and operates horizontally across agencies, and Command, which operates vertically within an agency. Under ICS an incident has only one Incident Controller but a number of line commanders may be required depending on the number of agencies involved.

## Conclusions

On a global scale emergency services consume large amounts of funding each year. Safety, effectiveness and efficiency are achievable where a seamless integration of agencies is possible at an emergency. A globally implemented ICS will improve firefighter safety, efficiency and effectiveness in management response. It will also limit damage to property and, most importantly, will save lives. ICS provides the model for command, control and co-ordination of an emergency response. It provides a means of co-ordinating the efforts of agencies as they work towards the common goal of stabilising an incident and protecting life, property, and the environment. Many emergencies, from vehicle accidents to large-scale disasters, require co-ordination across several agencies. It will also reduce the risk of agency overlap and potential confusion at an emergency through poor understanding and inadequate co-ordination.

It is critical that a common global incident management system is adopted that will enable any assistance to quickly function in an effective manner. ICS is that tool which can enable that goal to be achieved.

# **A Strategy for Future Development of International Cooperation in Wildland Fire Management**

(Prepared by the International Liaison Committee for the 2003 International Wildland Fire Summit)

## **AUTHORS:**

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## **Introduction**

The attendees of the Sydney Summit are searching for pragmatic and sustainable responses to the human health, environmental, and economic damage caused by unwanted wildland fires. Each country has valuable experience that will provide a contribution to developing synergistic solutions. Many countries and international agencies, especially those with well-developed wildland fire management systems or with resources to share, are in a position to assist others.

## **Theme**

The theme of the summit is: *Fire Management and Sustainable Development: Strengthening international cooperation to reduce the negative impacts of wildland fires on humanity and the global environment.*

## **Objectives**

The Summit participants will review, discuss, and recommend strategies to improve communication and coordination between agencies and organizations to build a coherent response in reducing the negative impacts of wildland fires on humanity and the global environment. The objectives of the Summit are:

1. Based on the international conventions, the state-of-the-art knowledge generated by the international science community and the recommendations of prior conferences on wildland fires as well as the outcomes of the World Summit for Sustainable Development (WSSD), participants will develop strategies and organize resources to support and enhance the networks and information sharing between agencies and organizations.
2. Agree to develop and support implementation of appropriate mechanisms to improve global and regional communication and knowledge sharing on wildland fire management issues and solutions.
3. Agree to work regionally to implement key Summit outputs intended to facilitate the interagency cooperation and implementation of ecologically sound, community based wildland fire management programs.

## **Intended Outputs**

The Summit participants will discuss, recommend, and adopt as appropriate a series of strategies that will build on the work of many groups, conferences and regional summits and produce a series of actions building towards enhanced international cooperation in wildland fire management. These

processes will pave the way towards a Global Wildland Fire Summit and the 4<sup>th</sup> International Wildland Fire Conference.

The proposed Summit outputs are position papers. The papers will be discussed and finalized during the Summit with participants agreeing either in principle or in substance to the paper and to implementation within their agencies. The level of agreement will depend on the participants' ability to commit their agencies to policy. An agreement in principle will mean that the participants agree that the strategies have merit and will begin to discuss and implement the strategies either within their agency or work with local partners to implement the strategy in the region.

5. An agreement on the **principles** that would apply to international wildland fire management projects and exchanges. The principles would be used and applied to projects with participation or funding from international or interagency partners.

*Specific actions for Summit participants:*

- ♦ Agreement in principle with the concept of adopting wildland fire management principles;
  - ♦ Agreement to work individually and collectively to adapt and apply the principles to local and regional activities.
6. An agreement on an **international agreement template** that can be used by agencies wishing to form a cooperative or mutual aid arrangement with one or more other countries for mutual assistance and technology exchange on wildfire management. The template will build on the FAO report of May 2002, *Legal Framework for Forest Fire Management International Agreements and National Legislation*.

*Specific actions for Summit participants:*

- ♦ Agreement on the concept that a common template for international wildland fire agreements is useful;
  - ♦ Agreement to adapt the template to specific local and regional conditions when instituting new agreements.
7. A statement of support from Summit participants to adopt an **Incident Command System (ICS)** as the international standard for wildfire incident management for all agencies participating in international or interagency agreements and exchanges. The statement will include examples of agencies currently using ICS, and sources of technology, training, and technical assistance.

*Specific actions for Summit participants:*

- ♦ Statement of support for adopting ICS as the international standard;

- ♦ Agreement to introduce ICS to their agencies and organizations and begin discussions with cooperating agencies for implementation.
8. An agreement to a **strategy for future development** of the issues and international responses to wildland fires, including commitments to a series of regional conferences, an international wildland fire congress, and the 4<sup>th</sup> International Wildland Fire Conference in 2007.

*Specific actions for Summit participants:*

8. Agreement with the concept that a series of regional conferences, summits, or roundtables will lead to a Global Wildland Fire Summit (date to be determined);
9. Agreement that the International Liaison Committee (ILC) of the 3<sup>rd</sup> International Wildland Fire Conference work with a local steering committee to prepare the 4<sup>th</sup> International Wildland Fire Conference by active support through regional meetings and conferences;
10. Agreement to work individually and collectively to secure resources and funding for hosting the regional sessions and implementing other Summit outputs.

### **Operational Procedures**

#### *Global Wildland Fire Network*

The Regional Wildland Fire Networks will be consolidated, developed and promoted through active networking in information sharing, capacity building, preparation of bilateral and multilateral agreements, etc. This process will be facilitated through regional Wildland Fire Conferences and Summits in cooperation with the International Liaison Committee and the UN-ISDR Working Group on Wildland Fire.

#### *International Liaison Committee*

The ILC will meet annually in 2004 and 2005 and biannually in 2006 and 2007. A portion of the agenda for each meeting will include preparation for the 4<sup>th</sup> Conference. In order to encourage the regional fire networks to actively work towards solutions to regional problems related to the Sydney Summit outcomes, the ILC will offer to hold meetings in the regions and devote a portion of the agenda to a Regional Summit with invited political, agency, and organizational representatives to discuss development of protocols and establishing networks for exchanging technical, scientific, and other information.

The regional summits will be hosted and supported financially by local agencies or organizations. The agenda and themes will be developed locally. The meetings can be held in conjunction with established conferences and meetings.

## Background Information

Background information for the Summit is provided on the website of the GFMC / Global Wildland Fire Network at:

<http://www.fire.uni-freiburg.de/GlobalNetworks/RationaleandIntroduction.html>

and

<http://www.fire.uni-freiburg.de/summit-2003/introduction.htm>

## Annex

The outcomes of the Conference and Summit and the work of the ILC are built on a series of actions and the sustained work of many groups, both formally and informally to promote and advance fire management activities throughout the world. Without an appreciation of the work that has gone on prior to this effort, the wildland fire community runs the risk of expending energy on redundant activities, or worse, missing opportunities to build and leverage the valuable work of others.

One of the actions envisioned for the Summit participants is an agreement to develop an **organizational structure** for international liaison in wildland fire issues. This Conference follows the 1<sup>st</sup> and 2<sup>nd</sup> conferences sponsored by the North American Forestry Commission (NAFC) – Fire Management Working Group (FMWG). NAFC is one of several forestry commissions established over 35 years ago by FAO. The work of the FMWG is a good example of how established organizations combined with the individual, or ad hoc, efforts have resulted in international agreements, bi-lateral programs among the member agencies, and, most notably, the three international conferences. With the success of the 3<sup>rd</sup> Conference and Summit as a benchmark, the ILC and the conference organizers envision an organizational structure that builds on the strengths of both the established organizations, and the creative energy of the ILC.

Examples of the established mechanisms include the United Nations programs and conventions, non-UN international organizations and programmes, the civil society, and the Global Fire Monitoring Centre (GFMC). Examples of individual or ad hoc efforts are the work of the ILC at international and regional levels and some of the individual and collective fire networks being established by the ISDR Global Wildland Fire Network.

Below is a summary of some of the major programs and activities that can be the building blocks for future activities within the wildland fire community. It is suggested that Summit participants become familiar with the work of these groups and use them to leverage ongoing and future activities.

- ♦ The Global Wildland Fire Network under the auspices of the UN-International Strategy for Disaster Reduction, Inter-Agency Task Force, and the GFMC;
- ♦ The UN Office for the Coordination of Humanitarian Affairs (OCHA), through the Emergency Services Branch, Environmental Emergencies

Section (EES), in coordination of international assistance in case of wildland fire disasters;

- ♦ The Type II Partnership "Integrated Approach to Prevention for and Response to Environmental Emergencies in Support of Sustainable Development" coordinated by UN-OCHA;
- ♦ The Global Forest Fire Assessment 2005 within the frame of the FAO Global Forest Resources Assessment (FRA) 2005 supported by the FAO, the GFMC, and the Global Observation of Forest Cover/Global Observation of Landcover Dynamics (GOFCC/GOLD) - a project of the Global Terrestrial Observing System [GTOS] programme, sponsored by the Integrated Global Observing Strategy [IGOS].

The ILC envisions several future activities that will lead up to the 4<sup>th</sup> International Wildland Fire Conference and Summit in 2007. These activities will build on the actions of the established groups and programs and will continue the work of the ILC, the FMWG, and the Australasian Fire Authorities Council (AFAC) the organizers of the 3<sup>rd</sup> Conference and Summit in Sydney. The ILC, and its partners, will work to gain widespread support and involvement to build global support and participation in the 4<sup>th</sup> Conference. Some key activities include:

- ♦ A post-Summit activity to prepare an input paper to the UN General Assembly that seeks the support of countries to strengthen international cooperation in response to wildland fire disasters and post fire mitigation;
- ♦ Additional support for the ILC organizational structure from individual agencies and international organizations and programs;
- ♦ Participation with FAO, GFMC and GOFCC-GOLD in support of the Global Forest Fire Assessment 2005;
- ♦ Recruit additional agencies and international organizations and programs to fund and staff the Global Wildland Fire Network and the ILC;
- ♦ Preparation for the follow-up Global Wildland Fire Summit.

## Community Based Fire Management (CBFiM)

### AUTHORS:

Prepared by the Food and Agriculture Organization of the United Nations (FAO), based on a paper by Peter F. Moore, using the paper by Ganz et al. (2003) as a key resource and the joint work of Project FireFight South East Asia, Regional Community Forestry Training Centre for Asia and the Pacific and FAO.

### Executive Summary

Community Based Fire Management (CBFiM) is a type of land and forest management in which a locally resident community (with or without the collaboration of other stakeholders) has substantial involvement in deciding the objectives and practices involved in preventing, controlling or utilising fires.

- The essential feature of the definition is that it takes seriously the idea of fire management being *community-based*. It does not include situations where people simply carry out paid work for a fire control agency or another agency outside the community.
- Because local people usually have most at stake in the event of a harmful fire, they should clearly be involved in mitigating unwanted fires. CBFiM is an option for blending participatory community development strategies and fire management to reduce unwanted fires and their impacts.
- CBFiM as an approach to the management of fire in the landscape rests on communities in decision-making roles for the application and control of fire, so that:
  - ☞ They have sufficient tenure (formal and informal) to ensure their rights are considered along with broader (e.g., national, provincial and district) production and environmental protection aims and objective.
  - ☞ They consider that involvement in land and fire management decision-making and activities will improve their livelihood, health and security.
- 80% of all fires are lit by women and 20% by men; but for primarily different reasons. Fire programs should to a large extent target women not men.

CBFiM is anchored in community level influence, if not control, of fire management decision-making. The active, intentional use of fire is an important factor in many, perhaps most, communities especially in developing nations. The initial focus for CBFiM should be on improving skills in the use of deliberate fires, incorporating key aspects of gender, community institutions and appropriate training. There are significant efforts still needed for CBFiM to take its place in the balanced and sustainable management of landscapes and ecosystems. These include improved fire data collection and analysis; strengthened recognition in law, policy and practice of the potential and roles communities can undertake.

## **Preamble**

Faced with increasing fire occurrence and decreasing fire suppression budgets, government departments, local organizations, and forest users must consider the range of fire management programs from around the world. Fires have burnt around the world in the decades of the 1980s and 1990s. Increasingly the solutions to these fire problems and the persistence of them year after year is suggesting that the reaction to fires to date needs to be reviewed. In part it has been suggested that a component of a balanced fire management should include an active role for communities. By considering proactive approaches--in particular those which recognise the existing effective fire management carried out by many groups of people in civil society or engage local communities to plan and perform fire management activities--fire management entities may avoid the pitfalls and mistakes of the past. Recent studies from five developing countries chronicle a range of local fire management scenarios; each with a diverse set of land uses and desired outcomes from Laos, Honduras, China, India, Turkey and The Gambia (FAO 2003). These approaches are seen as more effective, less costly, and more sustainable over the long term.

A series of meetings, a review and an international conference have been among major efforts on Community Based Fire Management conducted by Project FireFight South East Asia (PFFSEA), an initiative of WWF and IUCN, and its partners, including many of the summit attendees among them; FAO, USFS, GTZ, IUCN, WWF, GFMC and the Royal Forest Department of Thailand. Over the last half decade, a number of concrete efforts have been made to characterize what Community Based Fire Management (CBFiM<sup>9</sup>) means and how it effectively functions.

## **Background**

Analysis of CBFiM began in Africa and South East Asia in the early 1990s where the last few decades have seen persistent fires arising from a complex set of circumstances. While the underlying causes continue to be investigated and analysed some general themes and ideas have evolved for fire in South East Asia that may have wider application. As well as the need for improvements in legal and regulatory frameworks (Abdullah 2002), options for changes in economic factors and policy incentives (Gouyon & Simorangkir 2002, Simorangkir et al. 2002) the potential for local communities to play an ongoing role in fire management has been recognized.

In 1998, relevant, high quality, published or unpublished, information on community involvement in fire management was difficult to find and some argued that communities did not have any role to play in managing forest fires, other than as causes of them. Project FireFight South East Asia and RECOFTC sought to outline a series of steps to gather the information available and assess the interest in CBFiM. In December 2000, a regional workshop was held in Bangkok, Thailand, and then due to the wide spread interest prepared a larger conference held in July 2001 in Balikpapan, Indonesia, entitled 'Communities in Flames' (Moore et al 2002).

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<sup>9</sup> The authors use the acronym CBFiM to differentiate Community Based Fire Management from Community Based Forest Management, for which CBFM has become a well accepted abbreviation

The attendance of over 120 people from 21 countries was a strong endorsement of the view that communities can and do play an important role in the management of fires.

A series of publications was also prepared:

- A Review of CBFiM for South East Asia (Karki 2002)
- Proceedings of the Communities in Flames Conference (Moore et al 2002)
- FAO Global Series of Case Studies on CBFiM produced in cooperation with PFFSEA and RECOFTC (FAO 2003)
- CBFiM paper prepared for the XII World Forestry Congress, Quebec 2003 (Jurvélius 2003)
- Paper on CBFiM to International Wildland Fire Conference, Sydney 2003 (Ganz et al 2003)

The collected case studies and investigations of CBFiM perhaps frame the full range of situations and circumstances of communities and their fire. Manifestations of CBFiM range across service as fire fighters (Fredriksson 2002) to fire management without any interaction or support from government agencies or non-local institutions (Darlong 2002).

Due to the documentation and intervention mainly being external the writing and resources available, and much of the discussion, has not been entirely successful at placing the people of communities in the forefront.

## **CBFiM – What is it?**

### **Definitions**

During the last few years, there has been quite a lot of discussion about what is now referred to as Community-Based Fire Management (CBFiM). The term has been used to describe such a wide variety of different ways in which communities are involved in fire management, that it is difficult to make any systematic comparisons or generalisations. A definition should be precise enough to enable us to make useful generalisations about somewhat similar things, while being flexible enough to accommodate a variety of approaches, a definition based on essential features.

The definition proposed in recent work (Ganz et al 2003) is:

*CBFiM is a type of land and forest management in which a locally resident community (with or without the collaboration of other stakeholders) has substantial involvement in deciding the objectives and practices involved in preventing, controlling or utilising fires.*

This definition defines CBFiM, without confusing the definition by incorporating a separate definition of fire management, “fire management” is taken to be any fire prevention or “management” practice.

The essential feature of the definition is that it takes seriously the idea of fire management being *community-based*. It does not include situations where people simply carry out paid work for a fire control agency or another agency outside the community. CBFiM as an approach to the management of fire in the landscape rests on communities in decision-making roles for the application and control of fire, so that:

- They have sufficient tenure (formal and informal) to ensure their rights are considered along with broader (e.g., national, provincial and district) production and environmental protection aims and objective.
- They consider that involvement in land and fire management decision-making and activities will improve their livelihood, health and security (Abberger & Marbyanto 2003).

This is consistent with a trend in Community Based Forest Management (and various other terms with similar meanings), which sees the essence of genuine community participation in terms of some element of community power over decision-making.

The identification and analysis of CBFiM to date has been in a developing and emerging nation context. There some key differences between this and the circumstances of developed nations. The examples cited are in developing countries where the role of government and land use activities differ from those in developed countries. The definition of 'community' ('live in a particular locality' or 'a community of interest') essentially has a different meaning in developed countries, with media and interest groups having tremendous influence and power. In developing countries land use activities are more often tied to personal livelihood and existence without other choices being available.

Recent examples of 'Community Engagement' in developed countries could be seen as an element of CBFiM, as the community is increasingly invited to participate in fire management decision making and the importance of 'local knowledge' is being recognised and valued. However, there is little evidence that 'Community Engagement' ensures community empowerment in the context of land use management. In fact there is no common understanding apparent of 'Community Engagement'. The definition in this paper of CBFiM may help to establish a common understanding of what is needed in the process of working with communities in developed nations for fire management. Notably in such countries if CBFiM requires government involvement it will require considerable resources and training within the organisations and communities involved at least initially.

There is evolving recognition of a continuum of CBFiM<sup>10</sup>. In general terms it can be considered as having three nodes:

1. Local scale fire management where traditional or indigenous knowledge plays the major role in informing and undertaking fire management, which is also planned, conducted and controlled by local people. Livelihoods and maintaining the landscape are probably key to this node of CBFiM. The practices of Australian aborigines are an example of this node of CBFiM.
2. Community involvement in fire management that involves a range of local actors, including agencies and NGOs, that work on fire management. Livelihoods dependence, some traditional practice and community institutions may be characteristics. Elements needing

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<sup>10</sup> The authors are extremely grateful to Florensus Steven, GIS Officer, District Government of East Kutai, East Kalimantan, Indonesia, who came up with the concept of a CBFiM continuum.

support may include; analysis of the fire problem, technical capacity, regulatory framework or logistical assistance.

3. Volunteers from the community, perhaps with agency involvement, conduct fire management on behalf of the community across private and public lands. Volunteer Bushfire Brigades in Australia are an example of this. There is perhaps very little direct involvement of local people in the rural landscape and livelihood dependence on lands or forests is low.

In this CBFiM continuum a clear example of any node may not be obvious in any particular country or context. It is likely that any clearly understood CBFiM situation can be characterised as being similar to a specific node or a combination of characteristics from more than one.

### **Terminology**

Arnstein (1969) points out that the word “participation” is used in many ways, ranging from forms of non-participation (such as manipulation), through tokenistic forms of participation (“consultation”, “informing”) to forms of real participation such as “partnership”, “delegated power” and “citizen control”. CBFiM requires some real degree of community empowerment. In this sense “power” is defined as the capacity to have a genuine input into making real implementable decisions. Decision-making of this kind involves input into the setting of fire management objectives and deciding practices. It is important to understand here that a community role in decision-making does not necessarily mean total control, but that the community has a real input, perhaps in partnership with other stakeholders (such as forest departments) in the decision-making process.

It is necessary to be clear about what is meant by “community” as the word is commonly used in two completely different ways. One sense carries with it the idea of a group of people who live within a particular locality. The second sense is that of a “community of interest” (the “international community”, the “arts community”, the “conservation community”). This definition of CBFiM relates to a group of people resident in a locality. It would be possible to refer to any approach to fire management that involves a wide group of stakeholders (a “community of interest”) as community-based, but it seems more useful not to confuse two rather different types of situation in a single definition. The boundaries of this local group and its territory depend on local conditions and it can be thought of as the local group who would need to act together in some collective way for fire management. In some situations this might be a single village, in others a group of villages surrounding a forest or grassland, in yet another it might be the residents of a local government unit.

In many nations there are multiple ownerships that result in multiple goals, objectives and laws being intermingled. Many areas have National Parks and public forests created with goals or objectives that are perhaps contrary, perhaps consistent with the local people’s aspirations. Fire management involves imposing the management, rules and laws for a National Park or public forest, not CBFiM. In such countries there are broader, national laws and regulations that take priority over local rights, but there are programs in many cases that require local participation in order to develop programs across multiple ownerships and jurisdictions, each dependent on the

cooperation of the other for a fire protection and management plan to work. The core differences are the dependence by local people on forests or natural areas for livelihoods and the degree of government management over the land tenure.

It is important to stress that the use of the word “community” does not imply homogeneity. On the contrary, all communities have some degree of heterogeneity in terms of economic interests, power and many other characteristics. These differences often have important consequences in fire management as fires that negatively affect others may advantage one interest group. In CBFiM, the community identifies a group of people who need to cooperate (and negotiate) in order to act effectively according to agreed (and negotiated) objectives. There is no assumption that cooperation will occur.

### **Gender and fire**

An intrinsic aspect of communities is gender and in developing nations the roles of women, men and children. These can be quite specific, detailed and different. One example that illustrates this well comes from North-eastern Namibia (Namibia-Finland Forestry Program (NFPP); Progress Report 2000. Data collected in North-Eastern Namibia in 1996 was similar to the data from the neighbouring countries of Angola, Zambia, Zimbabwe and Botswana: From 50 to 85% of the forests, woodlands and savannah was reported to burn each year. In meetings with traditional leaders, technical staff discussed possible fire management strategies and steps that should be taken to reverse the trend of increasing, uncontrolled fires, aimed at restoring the situation to one in which the use of fire in the region was practiced in an environmentally sustainable manner.

When collecting data to serve as a basis for a study underpinning the above discussions, it was found that when men were interviewed, the main reason given for burning was because of “traditions”, inherited from father to son Virtanen (2000). When women were asked the same questions, they stated that most wildfires had escaped from controlled agricultural burning, a task that was exclusively carried out by women. Similar interview data was collected in Mozambique in 2001 in meetings with traditional leaders and local farmers associations held in the province of Zambezia (Virtanen et al. 2002). Although the clearing of new land for shifting cultivation was carried out by men, it was found that spot-burning to kill and remove stumps and trees from clearings was mainly done by women, who also carried out all agricultural burning following the harvesting of crops. It is evident that in order to prepare a viable strategy for sustainable fire management in which local people are involved, gender aggregated baseline data is needed.

Gender aggregated data from pilot regions showed that 80% of all fires were lit by women and 20% by men; but for primarily different reasons. It was concluded that in this case fire programs should to a large extent target women not men as had been previously done by the donor community. This targeting of men arose from the focus of all efforts on detection and suppression, activities dominated by men; instead of on prevention which was a women’s domain.

The people, women fire users, know very well that fire outbreaks threaten the very resources they need for survival in addition also their housing, children and elderly people. In the baseline study in Mozambique 17 % of women said that their crop had burned during the last year and 16% that their house had burned down; all in all 39% of women confirmed that their house had burned down one time or the other. Out of men 48% and out of women 36% confirmed that they had experienced losses due to wildfires encroaching into their land.

In poor countries the use of fire is mainly about the lack of economic choice and alternatives. There is no choice but to keep using fire in agricultural activities despite having no resources to handle a large fire outbreak resulting from their use of fire in livelihood activities. The implication for fire management of women handling most of the fire activity is strong. In most cases they are excluded from primary decision-making processes on management of land resources – a situation that needs to be addressed in the context of CBFiM as well as other frameworks.

### **Forms of CBFiM**

There are communities involved in fire management in a range of ways.

- In the western United States in planning and influencing land management through stakeholder fora (Everett, 2001).
- In Finland where most members of the Voluntary Fire Brigades in local communities have most of their assets invested in “forest farming” and are private forest owners who will protect their forests and
- Australia through Volunteer Fire Brigades that arise from the community and are mainly for protection of community assets and perhaps in many cases less engaged in forest and land management for subsistence or dependence on it in other ways.

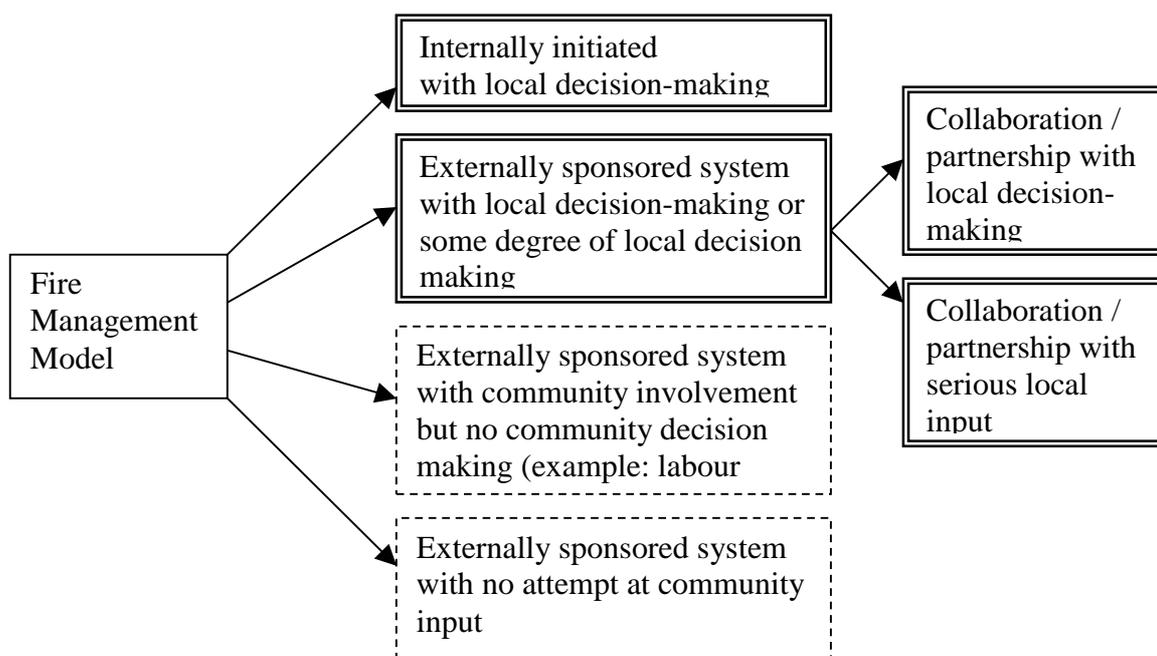
With the exception of Finnish forest owners, in the key respect of “substantial involvement in the objectives and practices involved in preventing, controlling or utilising fires.” these developed world “communities” do not conform to the definition above. These groups are volunteers, from the community and in a sense 'for' the community but they are focused on fire fighting in two respects - preparedness and response with a little bit of prevention if they participate in prescribe burning or other measures. They are not really "community based" in the same form that CBFiM has been identified to date in developing nations, but do form a node of the CBFiM continuum.

This emphasis on locality does not imply that only local residents should be involved in fire management. Obviously there are other stakeholders (people who can be affected by the outcomes of fire management and people who can affect the outcomes). Partnerships between local people and other stakeholders are quite consistent with CBFiM. But an approach that starts with local actors and works out to include other stakeholders involves different strategies than one that starts by identifying all stakeholders and includes local residents as just one category.

While some community fire management practices are locally initiated, others are set up by outside agencies, such as forest departments perhaps supported by donors. Typically, these externally sponsored systems recruit

community members into committees or working groups to manage fires. It is possible to distinguish between externally sponsored community approaches where there is meaningful community involvement in decision-making and approaches where the community is involved in carrying out tasks determined by others (such as providing labour to build firebreaks). Some modes of management that do not allow for community input but do allow for community involvement (Figure 1 - dashed lines) are not considered CBFiM as per the definition previously given. Although there is some emphasis on whether the system is initiated internally or externally, it should be noted that the initiation is not as important as the amount of credibility given to local decision making (Figure 1 - double lines).

Any attempt to improve and support CBFiM must start with an understanding of the causes and functions of various types of fires, and with their implications to various stakeholders within and outside a community. It is necessary for external actors to know where a fire started and why, before working with a local community to manage its effects. Similarly whether various stakeholders see a fire as beneficial or damaging is important before deciding what management is appropriate or possible. The technical and organisational capacities of communities should also be considered.



**Figure 1.** Modes of Community Input in Decision Making in Fire Management

### Legislation, Policy and CBFiM

In most developing nations, specifically South East Asia, fire is not well dealt with in legislation (Abdullah, 2002). The tenure covered is usually restricted to public lands and the responsibility for fires starting and the management of fires is not allocated. Generally fires are treated as negative; the use of fire for livelihoods purposes is mainly not accepted, with exceptions in a few countries. The lighting of fires is in many cases an offence punishable under the laws. In very few cases are fires permitted for any purpose. Malaysian legislation is an exception where deliberate fire is allowed under permit for

local and small-scale activities that are specified in the law. Commercial scale fire use is banned in Malaysia.

Specific Legislation most often criminalises local farmers using fire as illustrated by an example from Mozambique (Article 40, Forest burning crime; Forest Act of Mozambique, 1999):

*“Anyone who, voluntarily, sets fire and thus partially or totally destroys crops, forests, woods or a grove of trees, shall be condemned to an imprisonment sentence of up to one year and to the corresponding fine”.*

More than a million local families are daily practicing shifting cultivation in Mozambique. Applying this law to the essential livelihood practices in local communities is problematic. The only solution is to involve these communities in; fire awareness, mitigation and education activities (CBFiM) so that their traditional knowledge and inherent skills are applied to the issue of unwanted damaging fires. Increasing awareness of the damaging effects of fires can have a strong effect on communities that may not have recognised the impacts, on them as well as others and the landscape, of escaped fires (Wright & Byring 2003).

With the meagre resources usually allocated to fire management the Government cannot supervise this new Act in Mozambique; and the tightening of legislation will not have any impact on wildfire occurrence.

In Namibia a similar situation was approached by developing National Guidelines on Fire Management wherein directives were laid out on the responsibilities of various stakeholders in CBFiM, including Principles for Community Participation in Forest Protection in Namibia (Jurvélius 2001):

- Besides the national government, traditional authorities, commercial farmers and local communities are also responsible for the implementation of forest protection policies to maintain and manage the environment, to prevent and overcome damages, reduce air pollution, wind and water erosion as well as to sustain natural resources.
- When it comes to Declared National Parks; then the principles of Community Involvement in Park Management should be applied to any fire situation in or around the Park. The local communities involved in forest fire management should be paid out of the Game Product Trust Fund.

Activities set out under the guidelines included:

- To inform and educate the rural population, commercial farm communities and the general public in the role of forests and its contribution to the national economy. Numerous are still the people who see the forest as merely a source of income for timber and non-wood forest products. This short-term exploitation goal has led to drastic damage and denudation of forests to the point that the existence and quality of forest resources have declined greatly.
- To inform and educate the public about adverse environmental and economic effects of bush encroachment on commercial farming communities.
- Encourage the formation of Fire Protection Associations in commercial farming areas and Fire Committees in communal areas.

- Encourage NGO's, CBO's and private initiatives regarding forest extension and law abiding activities.
- Encourage civic organizations, religious organizations, womens groups, listener-reader-viewer groups, conservation groups, handicraft producers, local artists and environmental organizations to upgrade their understanding and appreciation of forests through their participation in regular activities and exchange of information.
- Enhance the role of civic organizations in motivating community participation in forest protection activities including fire prevention and suppression.

The focus in this case is on forests but the direction and focus of the principles and activities could equally apply, once adjusted, to other parts of the human and natural landscape.

A further consideration is the clarity of tenure under laws and regulation. In CBFiM efforts the formal or informal rights of access and use of lands was identified as a key aspect of communities taking an active role in fire management. The allocation of rights, access and operational efforts to clarify tenure are in many case not well formed in many nations. This is not necessarily restricted to developing nations as an issue, Greece has a poor cadastral base which contributes to the ongoing difficulties with fire in that country.

There are many important components involved in fire management at the policy and field level but a recurring theme is the fundamental question of who should control the use of fire and manage it appropriately? The rural landscape in developing nations remains home to millions of people, both indigenous inhabitants as well as voluntary and forced migrants. Rural communities inevitably compete with internal and external factors for access to natural resources and the right to use fire as a management tool. Increased competition for land, water and forest resources may be an important factor driving the need for more clearly defined roles and responsibilities in fire management.

### **Context for CBFiM**

Fire is a disturbance that has played, and will continue to play, a major role in both fire sensitive and fire adapted ecosystems throughout the world. In almost all of these ecosystems, humans have altered the natural fire regimes by changing the frequency and intensity of fires. In many parts of the world, local communities are often blamed for what are considered harmful fires. This view often encourages fire and forest management institutions to perceive local communities as part of the problem, and certainly not the solution. Evidently because local people usually have most at stake in the event of a harmful fire, they should clearly be involved in mitigating unwanted fires. Community Based Fire Management (CBFiM) is an option for blending participatory community development strategies and fire management to reduce unwanted fires and their impacts.

### **Agricultural Burning**

Agricultural fires are used for a wide range of purposes including:

- Management and maintenance of rangelands

- Beekeeping
- Hunting
- Wildlife Management
- Native People/Indigenous fires

The management of these fires generally lies with agricultural authorities and agencies. Worldwide most forest fires come from uncontrolled agricultural activities. Escaped agricultural fires represented 91% of fires in Italy (Corpo Forestale 2002) and 95% of fires in Portugal in 2002 (Forest Fires- Myths and Realities 2003).

The extent of agricultural burning is enormous. The figures of the European Commission Global Burned Area Assessment for the year 2000 showed over 230,000 fire scars in grasslands and croplands with a total burned area of over 200,000,000 hectares.

These figures suggest that fires deliberately started deliberately by people for agricultural purpose are significant in both numbers and area. The proportion of forest fires arising from escaped agricultural fires indicate that strengthening or encouraging of community based fire management is likely to be a significant means of improving the impacts of unwanted and damaging fires. The impact of this approach might be enormous.

Worldwide fires are overwhelmingly human, caused approximately 90% of all fires. Of these the majority are agricultural or livelihood fires deliberately lit to meet specific objectives. Intention will include hunting and wildlife management as well as land preparation and management of residues. Consequently community fire use must be recognised as potentially the largest source of information, expertise and experience available.

The focus for CBFiM needs, therefore, to be on building on existing knowledge, leading to efforts that improve the safe use of fire and minimising escaped damaging fires. Fire should also not be completely excluded from the daily lives of people and the landscapes they inhabit. Case studies illustrate the ways communities use smaller wanted fire to cultivate crops and non-timber forest products, hunt, create forage and manage pests and disease need to be distinguished from uncontrolled fires (FAO 2003).

### **The Current State of CBFiM**

To varying degrees, governments have begun to adopt collaborative or community-based forest management strategies. The term “community-based” in the context of fire covers a wide spectrum of situations; from potentially forced engagement in an activity (coercion), to free and willing participation in actions developed by local actors themselves (empowerment). The emphasis on “community-based” is not only the community involvement, but also where community capacity has been recognized and supported by external agencies (governments, non-government organizations, projects and others). This may include support to an existing indigenous system through formalizing, modifying, or otherwise elaborating on it, or instituting new systems. Many of these systems and approaches are considered more effective in tempering uncontrolled fires, more beneficial to local ecosystems, and more cost-efficient over the long term.

More common are instances where CBFiM has resulted from the formation of community institutions and mechanisms that support more efficient fire management entities (such as the two cases documented by FAO from Çal and Bergama in Turkey – FAO 2003). Here, the lead institutional transformations occur at the local level, with government and non-government agencies accordingly reshaping their own functions away from direct management functions towards more technical and advisory roles. The nature of institutional change varies from place to place.

In some countries, the driving force behind CBFiM approaches is indigenous land and/or use rights, including the right to use fire as a management tool. The securing of these rights may ultimately help maintain the beneficial uses of managed fires for such objectives as controlling weeds, reducing the impact of pests and disease, and generating income from non-timber forest products. A case study from Orissa, India (Darlong, 2002), documents the importance of the traditional uses of fire for cultivating Kendu and Mahua flowers. The dearth of documentation of these and other practices threatens to erode the stores of cultural knowledge. There are elements of CBFiM and other community-based strategies that represent a revival and formalization of traditional natural resource management regimes but there should be caution against the over-emphasis of this aspect or when re-introducing a traditional fire regime.

A similar caution is urged in respect to over-emphasizing the role and capacity of local communities to fight fires historically larger and of higher intensity than those of the regimes of the past. Given the fire regimes in many parts of the world, communities and their members can be an important, perhaps pivotal, component, but should not shoulder the entire burden for fighting fires. Several of the CBFiM approaches documented in various sources occur in remote locations where the government's fire control/suppression approaches are severely hindered by access and response time. In such remote locations, communities are present and have a significant role to play in the prevention and suppression of harmful fires that have a detrimental impact on their lives but the government must not relinquish all accountability.

The community should not bear the sole responsibility for extinguishing larger, more intense fires that require resources beyond local capacity.

Ultimately, CBFiM is concerned with how villagers manage fire for local daily subsistence needs, including as an aspect, ensuring local peoples' access to, and management of, land and forest resources. By placing tighter local controls on how fire is used, and reaching clearer consensus on resource use and territorial rights agreements with their neighbours and government agencies, local people can minimize the destructive effects of fire and maximize its benefits.

### **External Intervention**

Since external actors have generated most of the documentation and assessment there is an emphasis on the means and modes of intervention. Though from an outside perspective there ideas and approaches have much to offer in developing CBFiM and supporting progress towards matching its potential and integrating CBFiM into fire management.

To lead to *sustainable CBFiM* the aim should be to build on existing knowledge. Communities must own the fire management activity and design their community participation approach fitting their locality. They should call/arrange their own meetings and invite experts that they think will be of use for their focus. This will only happen if fire management is integrated with their production/livelihood systems.

A synthesis of insights and ideas generated to date by external actors is presented below.

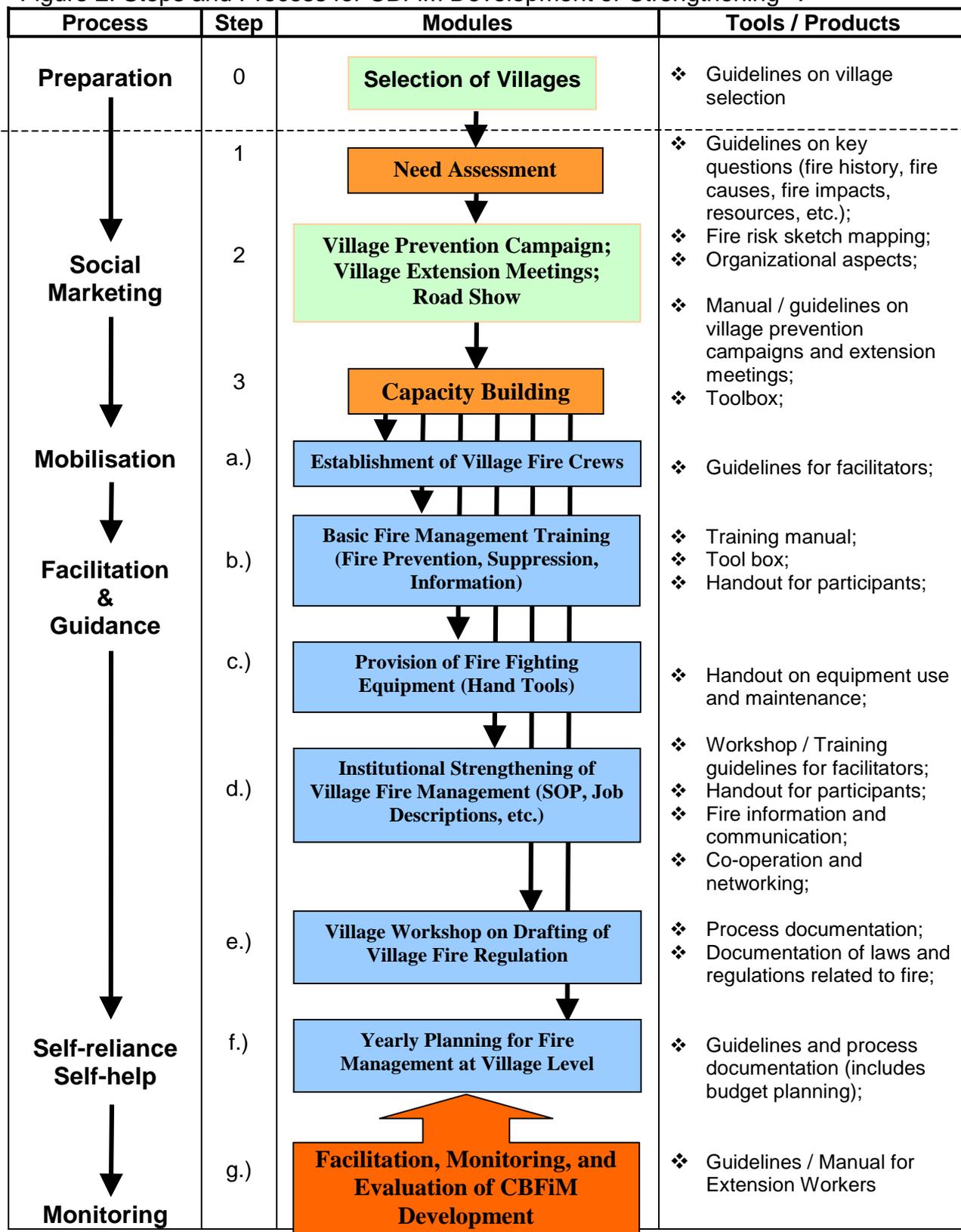
### **Conclusion**

CBFiM is anchored in community level influence, if not control, of fire management decision-making. The active, intentional use of fire is an important factor in many, perhaps most, communities especially in developing nations. The initial focus for CBFiM should be on improving skills in the use of deliberate fires, incorporating key aspects of gender, community institutions and appropriate training. There are significant efforts still needed for CBFiM to take its place in the balanced and sustainable management of landscapes and ecosystems. These include improved fire data collection and analysis; strengthened recognition in law, policy and practice of the potential and roles communities can undertake.

The current efforts by a range of stakeholders and actors are welcome and positive. With continued emphasis and consistent focus the rapid increased appreciation of CBFiM can be reinforced and integrated into land and fire management.

Though they are preliminary the CBFiM nodes provide a means for identifying options and characteristics of community and local scale involvement in fire management for both emerging and developed countries.

Figure 2: Steps and Process for CBFiM Development or Strengthening<sup>11</sup>.



<sup>11</sup> From H. Abberger and E. Marbyanto, GTZ IFFM Project, East Kalimantan, Indonesia (unpub.)

## Countries Invited to the Summit

Albania	Korea
<a href="#">Argentina</a>	Malaysia
Australia	Mexico
Byelorussia,	Mongolia
Bolivia	Mozambique.
Botswana	Myanmar
Brazil	NAMIBIA
Brunei Darussalam	New Zealand.
Bulgaria	Nigeria
Cambodia	Panama
Cameroon	Papua New Guinea
Canada	Peru
<a href="#">Chile</a>	Philippines
China	Poland
Colombia	Portugal
Croatia	Russia
<a href="#">Ecuador</a>	Russian Federation
Ethiopia	Scotland
Finland	Singapore
Germany	South Africa
Ghana	Spain
Greece	Sudan
Guatemala	Switzerland
Honduras	Syria
India	Thailand
Indonesia	Turkey
Iran	Ukraine
Italy	USA
Japan	Zimbabwe
Kazakhstan,	N = 59

## International Agencies Invited to the Summit

ASEAN Secretariat	IUCN
Asian Development Bank	IUFRO
AusAID	JICA
CEPF (European Forest Owners Association)	NFPA
CIDA	UNEP-OCHA Joint Environment Unit
CIFOR	The Nature Conservancy (TNC)
European Union	UN Forum on Forests
FAO	UNU
GFMC	USAID
GOFC-GOLD	World Bank
GTZ	WWF
ITTO	UNCBD, UNFCCC, UNCCD
ISDR	N=27

## Participants at the Summit

#	Title	First Name	Family Name	Country or Organisation	Status
1	Ms	Adelina	Khamal	ASEAN	Observer
2	Mr	Raman	Letchumanan	ASEAN	Speaker
3	Mr	Geoff	Miller	AusAID	Speaker
4	Ms	Kathryn	Allen	Australia	Observer
5	Mr	Paul	Cottrill	Australia	Speaker
6	Mr	Matthew	Dadswell	Australia	Speaker
7	Mr	Paul	de Mar	Australia	Observer
8	Mr	Bill	Forbes	Australia	Observer
9	Mr	Len	Foster	Australia	Speaker
10	Mr	Keith	Harrap	Australia	Observer
11	Mr	Tony	Kelly	Australia	Host
12	Mr	Phil	Koperberg	Australia	Speaker
13	Mr	Dave	Luxton	Australia	Observer
14	Dr	Peter F.	Moore	Australia	Speaker
15	Mr	Gary	Morgan	Australia	Speaker
16	Mr	Greg	Mullins	Australia	Speaker
17	Mr	Russell	Rees	Australia	Observer
18	Mr	Rick	Sneeuwjagt	Australia	Speaker
19	Mr	Duncan	Sutherland	Australia	Exec Officer
20	Mr	David	Templeman	Australia	Speaker
21	Mr	Neville	Wran	Australia	Chair
22	Mr	Alexey M	Pshonko	Belorussia	Speaker
23	Ms	Opha Pauline	Dube	Botswana	Speaker
24	Mr	Flávio Montiel	da Rocha	Brazil	Speaker

25	Mr	Ricardo	Franca	Brazil	Observer
26	Mr	Joao Antonio Raposo	Pereira	Brazil	Speaker
27	Mr	Ung Sam	Ath	Cambodia	Speaker
28	Mr	Bob	Bailey	Canada	Speaker
29	Mr	Allan	Jeffrey	Canada	Speaker
30	Mr	Michael	Bruce	CEPF	Speaker
31	Mr	Jorge A.	Gándara	Chile	Speaker
32	Mr	Patricio I	Sanhueza	Chile	Speaker
33	Mr	Sergio	Valdes	Chile	Observer
34	Mr	Yongsheng	Du	China	Speaker
35	Ms	Wenli	Gong	China	Interpreter
36	Mr	Lifu	Shu	China	Observer
37	Mr	Brian	Hansen	CIC Saskatchewan	Observer
38	Ms	Olga Lucía	Ospina Arango	Colombia	Speaker
39	Mr	Gustavo	Galindo André	Ecuador	Speaker
40	Mr	Mike	Jurvélius	FAO	Speaker
41	Mr	Timo	Heikkila	Finland	Observer
42	Mr	Johann G.	Goldammer	GFMC/UN-ISDR	Speaker
43	Mr	Chris	Justice	GOFC/GOLD	Speaker
44	Mr	Ludwig	Schindler	GTZ	Speaker
45	Mr	Luis A	Cortes	Honduras	Speaker
46	Mr	Daniel	Murdiyarso	CIFOR	Speaker
47	Mr	Davide	Pontani	Italy	Speaker
48	Ms	Eva	Mueller	ITTO	Speaker
49	Mr	Bill	Jackson	IUCN	Speaker
50	Mr	Brian	Stocks	IUFRO	Speaker

51	Ms	Jessica		Korea	Interpreter
52	Mr	Yon Hwan	Cho	Korea	Speaker
53	Mr	Song Hee	Nam	Korea	Observer
54	Mr	Md Wahid	Hamdan	Malaysia	Observer
55	Dato'	Sidek Tambi	Jaafar	Malaysia	Speaker
56	Mr	Patrick	Tan	Malaysia	Speaker
57	Mr	Roberto Martinez	Dominguez	Mexico	Speaker
58	Mr	Oscar	Estrada Murrieta	México	Speaker
59	Mr	Enkthur	Dagva	Mongolia	Speaker
60	Mr	Hans	Hoffmann	Mongolia	Observer
61	Mr	Myint	Htun	Myanmar	Speaker
62	Dame	Margaret	Bazley	New Zealand	Speaker
63	Mr	John	Rasmussen	New Zealand	Speaker
64	Mr	Jim	Smalley	NFPA	Speaker
65	Ms	Matilde	Barrios	Panama	Speaker
66	Mr	Peter	Buson	Papua New Guinea	Speaker
67	Mr	Brown	Kiki	Papua New Guinea	Observer
68	Mr	Amílcar	Osorio Marcés:	Peru	Speaker
69	Ms	Neria	Andin	Philippines	Speaker
70	Mr	Domingos	Viegas	Portugal	Observer
71	Mr	Eduard P.	Davidenko	Russian Federation	Speaker
72	Mr	Georgy	Toloraya	Russian Federation	Speaker
73	Mr	Nikolay	Kovalev	Russian Federation	Observer
74	Mr	Victor N.	Sergeenko	Russian Federation	Observer
75	Mr	Yuri P.	Shuvaev	Russian Federation	Speaker
76	Ms	Jackie	Bridgett	South Africa	Observer

77	Mr	Pogiso	Molapo	South Africa	Speaker
78	Mr	Brian W.	van Wilgen	South Africa	Speaker
79	Mr	Iñigo	Ascasibar	Spain	Speaker
80	Mr	Francisco	Rodriguez y Silva	Spain	Observer
81	Mr	Ricardo	Velez-Munoz	Spain	Speaker
82	Mr	Mohamed Atta	Elgamri	Sudan	Speaker
83	Mr	Eddie	Treacey	Telstra	Observer
84	Mr	Siri	Akaakara	Thailand	Speaker
85	Mr	Wichai	Lamwilai	Thailand	Speaker
86	Mr	Jeff	Hardesty	TNC	Speaker
87	Mr	Juan Carlos	Brandt	United Nations	Speaker
88	Mr	Thomas	Frey	USA	Observer
89	Mr	Larry	Hamilton	USA	Speaker
90	Mr	Joel	Holtrop	USA	Speaker
91	Mr	James	Hubbard	USA	Observer
92	Mr	Buck	Latapie	USA	Speaker

**International Wildland Fire Summit – Follow-Up Action Table I**

Action item and / or remarks	Agency / person in charge	Activity	Timeframe or deadline
<b>(1) Paper 1 (Guiding Principles in Fire Management)</b>			
Draft final version based on suggestions compiled by Duncan Sutherland	Gary Morgan and co-authors	Update Paper i.a.w. inputs during the Summit	31 October 2003
<b>(2) Paper 2 (International Agreement Template)</b>			
Draft final version based on suggestions compiled by Duncan Sutherland  Comparison with FAO template and legal review	Tom Frey, Ricardo Vélez  Mike Jurvélius, FAO	Follow up in drafting agreements  Legal review by FAO LEGN  Input for COFO meeting 2005	31 October 2003  Done  t.b.d.
<b>(3) Paper 3 (Incident Command System)</b>			
Draft final version based on suggestions compiled by Duncan Sutherland	Murray Dudfield, Buck Latapie	Follow up to draft legislation for adopting ICS at national level or for cases of international cooperation in wildland fire incidents	31 October 2003
<b>(4) Paper 4 (Strategy for Future Development of International Cooperation in Wildland Fire Management)</b>			
Draft final version i.a.w. Summit Communiqué	Denny Truesdale, JohannGoldammer		31 October 2003
Agreement with the concept that a series of regional conferences, summits, or roundtables will lead to a Global Wildland Fire Summit (date to be determined)	(a) Regions: Regional initiatives should seek contact with regional entities that are in place	Call for regional consultations	Preferably 2003-2005
Agreement that the	(1) Host country Spain	Work towards	Next ILC meeting in

<p>International Liaison Committee (ILC) of the 3<sup>rd</sup> International Wildland Fire Conference work with a local steering committee to prepare the 4<sup>th</sup> International Wildland Fire Conference by active support through regional meetings and conferences</p>	<p>(2) In conjunction with FAO Silva Mediterranea</p> <p>(3) Coordinated with ILC</p>	<p>organizing the 4<sup>th</sup> Conference in 2007</p>	<p>Córdoba, Spain, 18 April 2004</p>
<p>Agreement to work individually and collectively to secure resources and funding for hosting the regional sessions and implementing other Summit outputs</p>	<p>Everybody</p>		<p>--</p>
<p><b>Global Wildland Fire Network</b> The Regional Wildland Fire Networks will be consolidated, developed and promoted through active networking in information sharing, capacity building, preparation of bilateral and multilateral agreements, etc. This process will be facilitated through regional Wildland Fire Conferences and Summits in cooperation with the International Liaison Committee and the UN-ISDR Working Group on Wildland Fire.</p>	<p>Regional activities: Everybody</p> <p>Facilitation of inter-regional process ("Global Wildland Fire Network"): GFMC / UN-ISDR WG4</p>	<p>Call for regional workshops, conferences and consultations;</p> <p>Instrumentalize / use meetings planned by other parties to create synergies</p>	<p><b>Details see:</b> Timetable for 2003-2005 in the Annex, to be successively completed and updated</p>
<p><b>International Liaison Committee (ILC)</b> The ILC will meet annually in 2004 and 2005 and biannually in 2006 and 2007. A portion of the agenda for each meeting will include preparation for the 4<sup>th</sup> Conference. In order to encourage the regional fire networks to actively work towards solutions to regional problems related to the Sydney Summit outcomes, the ILC will offer to hold meetings in the regions and devote a portion of the agenda to a Regional Summit with invited political,</p>	<p>Denny Truesdale with ILC, first meeting with Ricardo Vélez</p>	<p>Next ILC meeting in Cordoba, Spain</p>	<p>April 2004</p>

agency, and organizational representatives to discuss development of protocols and establishing networks for exchanging technical, scientific, and other information.			
<b>(5) Annex to Paper 4 (Strategy for Future Development of International Cooperation in Wildland Fire Management)</b>			
<b>(5.1) Summit participants become familiar with the work of these groups and use them to leverage ongoing and future activities</b>			
The Global Wildland Fire Network under the auspices of the UN-International Strategy for Disaster Reduction, Inter-Agency Task Force, and the GFMC	See remarks above. Source: <a href="http://www.fire.uni-freiburg.de/GlobalNetworks/globalNet.html">http://www.fire.uni-freiburg.de/GlobalNetworks/globalNet.html</a>	Information exchange	Continuous
The UN Office for the Coordination of Humanitarian Affairs (OCHA), through the Emergency Services Branch, Environmental Emergencies Section (EES), in coordination of international assistance in case of wildland fire disasters;	Source: <a href="http://www.fire.uni-freiburg.de/emergency/un_gfmc.htm">http://www.fire.uni-freiburg.de/emergency/un_gfmc.htm</a>	GFMC to brief OCHA-EES	November 2003, Geneva
The Type II Partnership "Integrated Approach to Prevention for and Response to Environmental Emergencies in Support of Sustainable Development" coordinated by UN-OCHA	Source: <a href="http://www.fire.uni-freiburg.de/emergency/int_agree.htm">http://www.fire.uni-freiburg.de/emergency/int_agree.htm</a>	GFMC to brief OCHA-EES	November 2003, Geneva
The Global Forest Fire Assessment 2005 within the frame of the FAO Global Forest Resources Assessment (FRA) 2005 supported by the FAO, the GFMC, and the Global Observation of Forest Cover/Global Observation of Landcover Dynamics (GOF/GOLD) - a project of the Global Terrestrial Observing System [GTOS] programme, sponsored by the Integrated Global Observing Strategy [IGOS].	See websites:  (a) Last FRA 2000 Forest Fire Assessment 1990-2000: <a href="http://www.fire.uni-freiburg.de/programmes/un/fao/fao_3.htm">http://www.fire.uni-freiburg.de/programmes/un/fao/fao_3.htm</a>  (b) GOF/GOLD-Fire Implementation Team (IT) website: <a href="http://gofc-fire.umd.edu/">http://gofc-fire.umd.edu/</a>		
<b>(5.2) Key activities</b>			
A post-Summit activity to prepare an input paper to the UN General Assembly that seeks the support of	UN-ISDR WG4 / GFMC	Report to UN-ISDR Inter-Agency Task Force for Disaster Reduction (IATF)	5-6 November 2003

countries to strengthen international cooperation in response to wildland fire disasters and post fire mitigation		for initial discussion (8 <sup>th</sup> IATF meeting)	
Additional support for the ILC organizational structure from individual agencies and international organizations and programs	Everybody	Fund raising	Continuous
Participation with FAO, GFMC and GOFC-GOLD in support of the Global Forest Fire Assessment 2005	FAO, GFMC, GOFC-GOLD Fire IT	Develop common procedures for Global Wildland Fire Assessment 2000-2005:  Meeting with FAO, GFMC, GOFC-GOLD Fire IT	a.s.a.p.
Recruit additional agencies and international organizations and programs to fund and staff the Global Wildland Fire Network and the ILC	FAO, GFMC, UN-ISDR;  everybody	GFMC to submit proposal to 8 <sup>th</sup> IATF meeting	5-6 November 2003
Preparation for the follow-up Global Wildland Fire Summit	UN-ISDR, FAO	GFMC to submit a very first proposal to 8 <sup>th</sup> IATF meeting	5-6 November 2003
<b>(6) Summit Communiqué (8 October 2003)</b>			
<b>(6.1) Specific Actions by Summit Participants</b>			
Agreement with the concept that a series of regional conferences, summits, or roundtables will be held and lead into the 2 <sup>nd</sup> Global Wildland Fire Summit no later than 2007, and the 4 <sup>th</sup> International Wildland Fire Conference and Exhibition in Spain in 2007.	See above.		
Agreement to work individually and collectively to secure resources and funding for hosting the regional sessions and implementing other Summit outputs. The regional summits will be hosted and supported financially by local agencies or organizations. The agenda and themes will be developed locally. The meetings can be held in	See above		Continuous, see timetable for 2003-2005 in the Annex, to be successively completed and updated

conjunction with established conferences and meetings.			
Agreement that the Summit outcomes will be transmitted to the following organizations: The United Nations through the International Strategy For Disaster Reduction (ISDR); the Food and Agriculture Organization (FAO); and the International Tropical Timber Organization (ITTO).	UN-ISDR Working Group on Wildland Fire  FAO  ITTO	GFMC to report to 8 <sup>th</sup> IATF meeting  Mike Jurvélius  Duncan Sutherland	5-6 November 2003  13 October 2003  November 2003
Agreement to request the assistance from the UN to lead the implementation of the outcomes of this strategy, including securing funding in support of the establishment of regional networks, conferences, and summits.	UN-ISDR Working Group on Wildland Fire	GFMC to report to 8 <sup>th</sup> IATF meeting	5-6 November 2003
<b>(6.2 )Follow-up Action</b>			
Establish an interim secretariat to ensure that the Summit outcomes are taken forward	NSW Rural Fire Service  ILC  GFMC	Post-Summit secretarial support through Executive Officer Duncan Sutherland  Preparation of 4 <sup>th</sup> Int. Wildland Fire Conference  (a) Publication of Summit papers and Communiqué in International Forest Fire News  (b) GFMC Pre-Global Summit Facilitation	October-December 2003  2003-2007  November 2003 (after receiving all final versions)  January 2004+
Paper # 1 to be further developed taking into account the comments of the Summit. Comments to be provided to the interim secretariat by 31 <sup>st</sup> October 2003.	Gary Morgan	Include comments to Paper 1 delivered by 31 October 2003	November 2003
Develop a Paper # 5 on Community-Based Fire Management by FAO by 31 <sup>st</sup> December 2003.	Mike Jurvélius, FAO	Compile paper	31 December 2003

<b>(6.3) Other Issues and Business Carried Forward</b>			
The role of gender in fire management	Mike Jurvélius, FAO	Draft paper, could be included in Paper # 5.	31 December 2003
Fire danger rating and fire early warning systems	(1) World Weather Research Programme (WWRP), Tom Keenan, Bureau of Meteorology, Melbourne  <a href="http://www.bom.gov.au/bmrc/wefor/projects/fire_wx/index.htm">http://www.bom.gov.au/bmrc/wefor/projects/fire_wx/index.htm</a>	(1) Finalize strategic paper developed by Workshop on International Collaboration in Fire Weather Research, Melbourne, 9-10 October 2003	November 2003
	(2) GFMC  <a href="http://www.fire.uni-freiburg.de/course/meeting/Blueprint%20Wildland%20Fire-Final.pdf">http://www.fire.uni-freiburg.de/course/meeting/Blueprint%20Wildland%20Fire-Final.pdf</a>	(2) Report Summit and WWRP meeting results to the UN Early Warning Conference, Bonn, 16-18 Oct. 2003	16 October 2003
Linking Incident Command System with community-based fire management systems	t.b.d.		

<b>International Wildland Fire Summit – Follow-Up Action Table II</b>			
<b>Action item and / or remarks</b>	<b>Agency / person in charge</b>	<b>Activity</b>	<b>Timeframe or deadline</b>
<b>(1) Regional Wildland Fire Meetings, Consultations, Conferences</b>			
Foundation meeting of the Regional Northeast Asia Wildland Fire Network (Seoul, Korea)	Korea Forest Research Institute (KFRI), GFMC, FAO  <a href="http://www.fire.uni-freiburg.de/GlobalNetworks/Northeast-Asia/Northeastasia.html">http://www.fire.uni-freiburg.de/GlobalNetworks/Northeast-Asia/Northeastasia.html</a>	Determination of activities of the participating countries (China, Korea, Japan, Russian Federation) to enhance regional cooperation in wildland fire management	6 March 2004
Conference on Forest Fire Management and International Cooperation in Fire Emergencies in the Eastern Mediterranean, Balkans and adjoining Regions of the Near East and Central Asia (Antalya, Turkey)	ECE-FAO Team of Specialists on Forest Fire, GFMC  <a href="http://www.fire.uni-freiburg.de/course/meeting/meet2004_05.htm">http://www.fire.uni-freiburg.de/course/meeting/meet2004_05.htm</a>	Regional conference with associated exercise and regional consultation	30 March – 3 April 2004
Second International Symposium on Fire Economics, Planning and Policy: A Global Vision (Córdoba, Spain)  <a href="http://www.rfl.psw.fs.fed.us/fir_emgt/symposium/en/">http://www.rfl.psw.fs.fed.us/fir_emgt/symposium/en/</a>	USFS / Denny Truesdale with Ministry for Environment Spain / Ricardo Velez, With UN-ISDR Wildland Fire Advisory Group / GFMC, Global Wildland Fire Network	Joint meeting of the International Liaison Committee (ILC) and the UN-ISDR Working Group on Wildland Fire	19-22 April 2004 ILC Meeting: 19 April 2004
Regional Baltic Wildland Fire Meeting (Helsinki, Finland)	Ministry of Interior, Finland, with FAO, ECE/FAO Team of Specialists on Forest Fire, GFMC, UN-ISDR Wildland Fire Advisory Group, Global Wildland Fire Network  <a href="http://www.fire.uni-freiburg.de/GlobalNetworks/BalticRegion/BalticRegion.html">http://www.fire.uni-freiburg.de/GlobalNetworks/BalticRegion/BalticRegion.html</a>	Regional consultation on cooperation in wildland fire management	10 May 2004

Advanced Wildland Fire Management Training Course for SADC Countries (Nelspruit, South Africa)	Global Wildland Fire Network, UN-ISDR Wildland Fire Advisory Group, GFMC, FAO; UNEP, OCHA, UNU  <a href="http://www.fire.uni-freiburg.de/GlobalNetworks/Africa/WFTCA.htm">http://www.fire.uni-freiburg.de/GlobalNetworks/Africa/WFTCA.htm</a>	UN interagency training course with Regional consultation on cooperation in wildland fire management	30 May-5 June 2004
Regional South America Wildland Fire Conference (Curitiba, Brazil)	Universidade Federal do Paraná / Ronaldo Soares, with FAO, GFMC, UNEP, UN-ISDR Wildland Fire Advisory Group, Global Wildland Fire Network  <a href="http://www.fire.uni-freiburg.de/course/meeting/meet2003_14.htm">http://www.fire.uni-freiburg.de/course/meeting/meet2003_14.htm</a>	Regional wildland fire conference (3 <sup>o</sup> Simpósio Sul-Americano sobre Controle de Incêndios Florestais) with foundation of the Regional South America Wildland Fire Network	14-17 June 2004 Network Foundation Meeting: 17 June 2004
Western Hemispheric Forest Fire Conference (San José, Costa Rica)	FAO Forestry Commissions for Latin America and the Caribbean, and North America  <a href="http://www.fire.uni-freiburg.de/course/meeting/meet2003_14.htm">http://www.fire.uni-freiburg.de/course/meeting/meet2003_14.htm</a>	Regional Western Hemispheric consultation of the agencies responsible for wildland fire management, on fire management cooperation	23 October 2004
FAO / GFMC Training Course for Instructors in Community Based Forest Fire Management (CBFiM) (Nelspruit, South Africa)	FAO, GFMC  <a href="http://www.fire.uni-freiburg.de/course/meeting/meet2003_20.htm">http://www.fire.uni-freiburg.de/course/meeting/meet2003_20.htm</a>	Training course with regional consultation	11-22 October 2004
Technical cooperation programmes by donor agencies such as USDA, JICA, CIDA, GTZ, ITTO, IUCN, AIDAB, TNC, WWF, FAO, DIDC, Spain etc.	Agency coordinators	Assisting countries in developing appropriate fire management capabilities and skills	Continuous